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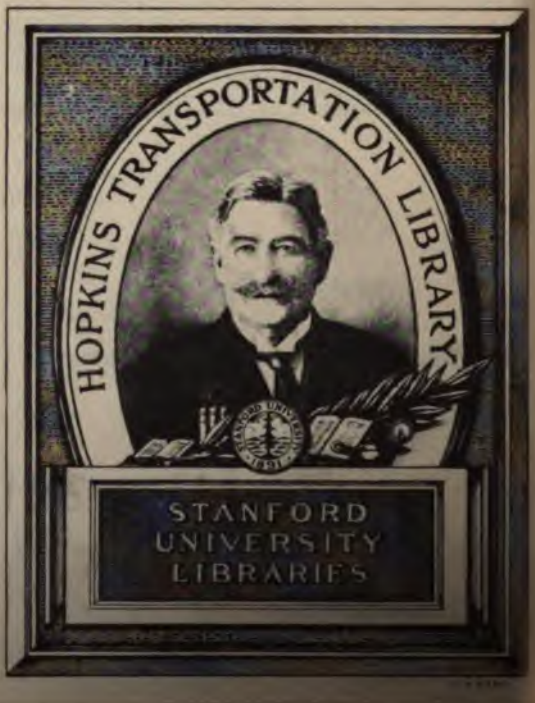
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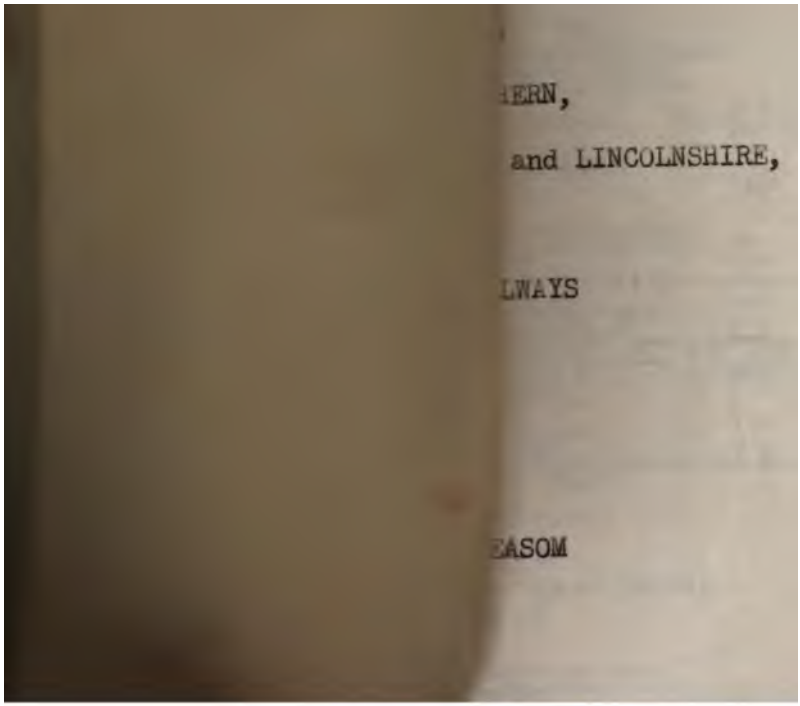
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and LINCOLNSHIRE,
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THE OFFICIAL
ILLUSTRATED GUIDE
to the
GREAT NORTHERN,
MANCHESTER, SHEFFIELD, and LINCOLNSHIRE,
and
MIDLAND RAILWAYS

BY

GEORGE MEASOM

[LONDON]
Griffin Bohn
[1861]

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GREAT NORTHERN RAILWAY COMPANY.

DIRECTORS.

Chairman—EDMUND DENISON, Esq., M.P., Doncaster.
Deputy-Chairman—GEORGE HUSSEY PACKE, Esq., Caythorpe, Grantham; and 41, Charles-street, Berkeley-square, W.

Major Amsinck, Richmond, Surrey.
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Walter Brydone, Esq., C.E., Engineer.
Archibald Sturrock, Esq., Locomotive Engineer.
George Thomson, Esq, Goods Manager.
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M. Kirtley, Esq., Superintendent of Loc. Dep.
E. M. Needham, Esq., Supt. of Passenger Traffic.
T. Walkate, Esq., Man. of Goods Department.
S. Sworbrick, Accountant.

Auditors—Joseph Cripps, and Alfred Allott, Esqs.

Head Offices—Derby.

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Deputy-Chairman—WILLIAM FENTON, Esq., Meadowcroft, Rochdale.

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George Gamble, Esq., Gainsborough, and 12, Bedford-place, Russell-square, London.
William Hutton, Esq., Gate Burton, near Gainsborough.
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Charles Sacré, Esq., Engineer and Superintendent of Locomotive and Stores Depart.
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C. H. Smith, Esq., Goods Manager.
R. G. Underdown, Esq., Chief Accountant.

Auditors—Edwin Unwin, and S. P. Robinson, Esqs.

Head Offices—London Road, Manchester.

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Preface.

AY travelling has become so much a matter of necessity with all whether engaged in the pursuit of pleasure or commerce, that a book to explain a route or beguile a journey is absolutely essential, and il to have a general welcome, especially when *zealous efforts* have been render it valuable and interesting. An intelligent companion to point ever is worthy of observation in our progress through an extensive country, is a friend in every sense of the word; and in this character ire to introduce ourselves to our readers, promising ample resources nual, and an amount of information rarely to be found in the narrow com- Guide. The Great Northern, Midland, and Manchester, Sheffield, and hire Railways open a rich view for the artist, the antiquarian, and the nature. The illustrations, chiefly drawn on the spot, include many of the eresting scenes in the kingdom: our descriptions will, we trust, be found aithful.

nderful success which has attended the OFFICIAL RAILWAY GUIDES already l, is a guarantee that care has been devoted to the present VOLUME. If, f vigilance, errors should have crept into any of these useful Works, the or will be glad to rectify them on a notification being addressed to him on ect.

aders will remark, that the COMMERCIAL NOTICES of particular towns on s of railway embrace a large number and variety of the *most important* Great Britain, and *much interesting and valuable information will accrue m*; these descriptions being the result of *personal visits*, and of notes taken spot. The Advertisements at the end of the work have likewise been from *immediate* interviews; and the public, *especially the recipients of the tion volume*, will particularly remember that the persons selected are in s the *leading* merchants, manu- s, shipbuilders, shipowners, and en in the several towns specified. nclusion, it is hoped that the same favour which has been so liberally o our other "Guides," may ex- this volume; it being the FIRST TE GUIDE ON THE RAILWAYS DE- .

due to the General Manager and fficers of the Company, that we ledge with *grateful thanks* the assistance and facilities afforded. ntirely NEW EDITION of this Work, Companion Volume, will be issued , 1862, and any communication TING THE NEW EDITION may be ed to the Author at his *private* e, St. Margaret's Lodge, Ailsa Twickenham, S.W.

ES:—74, CHARRINGTON-STREET, ONDON, N.W.—*June*, 1861.

THE AUTHOR.
(*From a photograph.*)

A GOSSIP INTRODUCTORY

THE GREAT NORTHERN, MIDLAND, AND MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAYS, considered in all their details, from the origin of the undertakings to their present condition, form one of the most interesting subjects for contemplation which the history of railways generally, so prolific in strange, eventful circumstances, presents. We cannot, however, in the limited pages of a Guide on these important lines, chronicle the various incidents which gave birth to, and attended the progress of these gigantic enterprises, the numerous obstacles overcome, and the persevering efforts which have rendered the lines the most perfect and substantial in the kingdom. We can but *allude* to the importance of the Great Northern as a Trunk Railway to the North of England and Scotland, connecting together the most important agricultural and manufac-

turing districts in the empire, and endeavour, briefly, to describe
various objects of interest which the line and its tributary bran
present, through a country proverbially rich in antiquarian remains,
for the most part, abounding in natural scenery of remarkable beau

GREAT NORTHERN.

The GREAT NORTHERN constitutes an amalgamation of the LONDON and Y
and DIRECT NORTHERN. Incorporated 9 and 10 Vic., cap. 71 (26th June, 1
for construction of a line from London to York, *viâ* Peterborough, Newark,
Retford, with a loop line from Peterborough, through Boston and Lincoln, rejo
the main line at Retford. Length, 275 miles. This company subsequently obt
power to construct branches to Spalding, Hertford, Hadfield, St. Alban's,
Sutton, and the Isle of Axholme. Total parliamentary powers, 335½ miles.
company has leased the East Lincolnshire (Boston to Great Grimsby, 48 miles,
the Royston and Hitchin, 19 miles).

METROPOLITAN JUNCTION.—By 23 and 24 Vic., cap. 168 (23rd July, 1860)
Great Northern is authorized to construct a communication from near King's
to the Metropolitan, to be completed within five years. Works in progress.
capital, £30,000, at 4½ per cent. in shares, and £10,000 on loan.

NOTTINGHAM AND GRANTHAM.—An arrangement was entered into as follow
1855:—"The Nottingham to complete line into and station at Nottingham.
Great Northern to work the line, exclusive of the Grantham and Nottin
Canals, at 30 per cent. of gross earnings, if the traffic be less than £37,000 a
or at 35 per cent. if it exceed that sum. The agreement for ten years, with p
to the Great Northern to take the whole undertaking, at a fixed annual rent
4 per cent. within four years, or 4½ per cent. within nine years; or to amalga
the two companies at par."

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE.—By 21 and 22 Vic. (23rd J
1858) the Great Northern is authorized to enter into financial and traffic arra
ments with this company, in accordance with which the former is entitle
receive, out of the earnings arising from through traffic, such a sum as would,
other receipts, make up the gross sum of £10,000 per week, subject to being re
when their gross receipts exceed £11,000 per week.

DUNSTABLE, LUTON, AND HERTFORD.—This line is incorporated with the G
Northern. The principle of the agreement is that the Great Northern pay for
Dunstable and Welwyn section a fixed dividend on the original capital, amoun
to £70,000, commencing at 3 per cent. for the first year, 4 per cent. for the se
and third years, and 4½ per cent. per annum subsequently; for the Welwyn
Hertford section 1 per cent. per annum until April, 1866, upon £55,000, and 3
cent. per annum thereafter. The Great Northern also undertake the liabili
paying interest on mortgage and preference capital, amounting together to £152,
the total sum spent upon both lines being about £277,500.

TRAFFIC.—The Report of the Directors of the Great Northern Railway Com
states that £11,897,072 had been received on capital account to the 31st Decem
1860, and £11,625,842 expended, leaving a balance of £271,230. The sum

had been disbursed on capital account during the preceding half-year. The ture for land consisted chiefly of the settlement of an outstanding claim for the main line. The works in connexion with new lines were those for the olitan and North London Junctions, and for the Hertford and Luton y. The additional accommodation provided at stations was chiefly in for the coal and goods traffic, and at Grantham, which, having become an al junction, had required considerable enlargement.

following table gives a list of the tunnels on the Great Northern y, their names, position, length, and nature of the soil through they pass:—

Name.	Mileage from London.	Length in Yards.	Nature of Soil.
	m. chs.		
Maiden Lane	20	533	London clay.
Copenhagen	66	594	,,
Ottenham	5 42	704	Hard blue London clay.
Barnet	7 43	605	,, clay.
South Enfield	10 23	385	Blue clay.
North Enfield	10 61	231	,,
Potter's Bar	11 26	1,210	,,
South Welwyn . . .	22 15	1,448	Chalk, with strata of loam, clay, sand, and gravel.
North Welwyn . . .	22 45	1,046	Chalk.
Stoke	100 33	880	Blue lias clay.
Caseliffe	107 60	968	Lias clay.
Oakham	134 33	55	Dry red marl.

vellers on this railway may rest assured that the greatest vigilance, ry department, is exercised to avoid accident. Ample instructions ven to every person connected with the line, by which attention comptitude are secured. The code of signals in use is very , and is universally admitted to be the best managed on any line kingdom. (The engineer of the line, Mr. Brydone, is the patentee rst-rate signal candle lamp, which is admirably adapted to the e, and *reflects* great credit upon the ingenious inventor.) The signal *to stop* is shown by a *red* flag, or, in the absence of the y both arms being held up. *Caution to slacken* speed is shown reen flag, or, in the absence of the flag, by one arm being held up. *ght* is shown by a *white* flag, or, in the absence of a flag, by the right arm in a horizontal position, pointing across the line on which the train is proceeding. *Hand signals by night.*—The

danger signal *to stop* is shown by a *red* light, or by any light up and down. *Caution to slacken speed* is shown by a *green* light, light moved slowly from right to left. *All right* is shown by a light. *Semaphore signals by day.*—The signals are constructed either one or two semaphore arms. The signal is invariably ma the *left* hand side of the post, as seen by the approaching engine- The danger signal *to stop* is shown by the arm on the left-han being raised to the horizontal position. When the two are raised zontally, both lines are obstructed. The caution signal to *slacken* is shown by the semaphore arm on the left hand side being raised angle of 45 degrees. *All right* is indicated by the left hand side post being clear, the arm being within the post. *Fixed signals by* —The *danger* signal is given by the *red* light; *caution* by the *green all right* by the *white*. *Signals for special trains or return engin red* board by day, or an additional lamp by night, at the end train, indicates that an additional or extra train or engine is to *Detonating signals* are used, in addition to the regular day and signals, in cases of fog, obstruction, or accident. The E Telegraph signalling is most perfect.

MIDLAND.

An amalgamation of the NORTH MIDLAND, MIDLAND COUNTIES, and BI HAM and DERBY, since the 10th May, 1844, under the powers of the Amalgamation (7 and 8 Vic., cap. 18), which provided that the accounts be kept separate, and the profits divided by each of the above companie 30th June, 1844.

The NORTH MIDLAND was incorporated 4th July, 1836, by Act 7 Wm cap. 107, for a line from Leeds to Derby, 74¼ miles; the MIDLAND COUNTIE continuation line from Derby to Rugby), 49¼ miles, was incorporated 21st 1836, by 7 Wm. IV., cap. 78. The BIRMINGHAM and DERBY, for a lin Derby to Birmingham, with a fork branch to the L. and N.W. at Hampt miles, was incorporated 19th May, 1836, by Act 6 and 7 Wm. IV., cap. 35. of amalgamated length, 181¼ miles.

LEICESTER AND HITCHIN.—The Midland had power by Acts of 1847-8 t this line, but abandoned it on arrangements with G. Northern. In 1853 it o an Act (17 Vic., cap. 108), 4th August, to make a line from Wigston S Leicester, to Hitchin Station, and branch to Wellingboro' Station of L. and 62 miles, branch 1 mile; also to lay down additional rails on Rugby and St This opens another entrance to London (Hitchin, 31 miles off London). 8th May, 1858.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE.

amalgamation of the SHEFFIELD, ASHTON-UNDER-LYNE, and MANCHESTER, REAT GRIMSBY and SHEFFIELD JUNCTION, the SHEFFIELD and LINCOLNSHIRE, SHEFFIELD and LINCOLNSHIRE EXTENSION, and the GREAT GRIMSBY DOCK panies, by virtue of powers conferred by Act 9 and 10 Vic., cap. 268 (1846). Act 10 and 11 Vic., cap. 190 (1847), authorized amalgamation with the CHESTER AND LINCOLN UNION; the whole were dissolved and re-incorporated company, under this title, by the "Consolidation Act" of 1849 (13 Vic., cap. Mileage in operation, 173¼ miles.

REAT NORTHERN.—By 21 and 22 Vic. (23rd July, 1858) the company is autho- to enter into arrangements with the Great Northern. The Act enables the n and appertionment of traffic, the working of the line of one company by ther, the purchase of stock, the provision of capital for common purposes, and ppointment of a joint committee with full powers.

SHIRE MIDLAND.—The Sheffield has subscribed £30,000 to this undertaking, one.

SCASHIRE AND YORKSHIRE.—The directors have concluded and sealed an ment with this company for the use of Barnsley Station, and for other purposes. have also agreed with the

TH YORKSHIRE COMPANY to work traffic between Barnsley and Doncaster, by establishing a better through service between Doncaster and places north ast thereof, and Liverpool and Manchester.

CKFORT AND WOODLEY.—The Sheffield subscribes £40,000 to this line, and 00 to the Marple, New Mills, and Hayfield.

TH JUNCTION.—The moiety of this line gives the right to share in the Birken- and Welsh traffic, when brought over it by the London and North-Western ay.

fore starting from the Terminus at King's Cross, a few words cting the vast building for the passenger traffic of this railway are sary. To obtain the site on which it is erected, the Small Pox pital and Fever Hospital were cleared away, and in October, 1852, Metropolitan Station, built under the architectural superintendence wis Cubitt, Esq., was opened to the public. In the chief *façade outh front*, two main arches mark the end of the arrival and rture platforms, and have each a span of no less than 71 feet. e are separated by a *Clock Tower*. The smaller arch on the right, h is over the cab-drive from the departure platform, has a span of 34

The width of the *façade* from the side towers is 216 feet, and the me width of the terminus is 305 feet. The *Clock Tower* stands 112 from the level of the rails, 22 feet across at its base, and 16 feet above the level of the roof, from which it springs. It is square,

surmounted by a slanting beaded roof, and is crowned with a gilde vane. The tower is fitted internally with rooms and staircases leadin to the clock-room. The clock is by Dent, and was exhibited at the Gre Exhibition. The principal bell is from an Irish foundry, and weighs 29 cw The *sheds* at the back of the *façade* form a distinguishing feature of th building, as they are each 800 feet long, 105 feet wide, and 71 fee

EXTERIOR OF THE STATION AT KING'S CROSS.

high, nearly three-fourths of the arch being covered with glass, an giving a vista of extraordinary effect. A brick wall, formed by pier and arches, divides the "sheds." On the west side of the departur platform are the offices for the administration of the general affairs o the railway, including a booking hall of 100 feet in length. There ar seven lines of way under each shed, with the necessary turn-tables an appliances. On the east side of the arched division wall there are th same number of lines, and parallel to them a covered way for cab omnibuses, &c. In the general appearance of the building great plain ness is observed, united, however, to strength and solidity. The ma terial is of brick. The architect "depends wholly for effect on the large ness of some of the features, the fitness of the structure for its purpose and a characteristic expression of the purpose."

The *Goods Station* of this terminus covers a surface of ground of

INTERIOR OF STATION AT KING'S CROSS.

about forty-five acres, laid out for the receiving, sorting, and despatching goods, minerals, merchandise, and produce of every kind from every place, and to any destination connected with the railway. This is situated in Maiden Lane, Battle Bridge, north of the Regent's Canal, by which it is bounded on two sides, and having water communications to the docks constructed in the station. By this canal, timber from the Baltic is brought on floats to the railway, and barges, with deals, wool, hops, casks of sugar, or other merchandise of a heavy or bulky character, are lightered and delivered into waggons for "the rail" and from it. The *Granary* which fronts the dock is 70 feet high, and will hold 60,000 sacks of corn.

Opposite the Booking Office is the GREAT NORTHERN HOTEL, co
structed under the direction of the Railway Company. The buildi
forms part of a circle of a large radius, and occupies the south-weste
boundary of the station. The whole is constructed fireproof by thi
walls dividing every room, and brick floors under the boarding, arch
to, and supported by iron girders, all being accessible and opening
corridors floored by stone landings, the corridors being connect

COFFEE-ROOM, GREAT NORTHERN HOTEL.

with two noble and spacious stone staircases. The basement story co
tains the kitchen, scullery, larders, ice-wells, wine, beer-cellars, &c.

During the present year (1861), a building to be used as a station f
the Great Northern Cemetery Company has been erected on the lin
and is the first object prominently visible, on our right, after we lea
the Station.

The **OFFICIAL**

ILLUSTRATED GUIDE

TO

THE GREAT NORTHERN,

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE,

AND

MIDLAND RAILWAYS.

leaving the platform, the train enters the *Maiden Lane Tunnel*, and ging on the skirts of the Goods Station, passes under the North on Railway, and one mile from King's Cross, enters the *Copenhagen* el, the total length of which is 594 yards. This is so called from

TICKET PLATFORM, HOLLOWAY.

ssing under *Copenhagen Fields*, now metamorphosed into the *Smithfield Market*. The principal *part of this market* occupies

an equal-sided rectangle of 15 acres and 4 perches, having a fall from the west. The pig-market and calf-market are each 3 roods 30 perches. The banking-houses, twelve in number, are placed in the centre. Out of them rises a lofty clock tower. Near to this station may be observed the castellated building, Holloway Prison, the property of the City of London.

The tunnel opens at a cutting formed by an embankment, from which an extensive view is presented of the northern suburbs of the great Metropolis, studded with churches, villas, and mansions in great variety. One mile and a half from London, near the Caledonian-road, there is a cutting 517 yards in length and nearly 50 feet in its greatest depth. From

HOLLOWAY STATION, one mile and a half from the London terminus, there is a fine view on the south of the *Metropolitan New Cattle Market*, with its clock tower; the *Church of St. Luke's*, Copenhagen Fields; on the south-west is seen the *City Prison*, already mentioned, surrounded by numerous villas and mansions; on the Holloway side are seen *Pine House*, the residence of Sir James Tylor, *Highgate Cemetery*, and its Church. On the Islington side is *Highbury College*, seated on rising ground. At Holloway we cross the road bridge, which arches the turnpike road about one and a half mile from the London Terminus, consisting of ten arches or openings of different spans, varying from 45 to 20 feet each. On leaving the station we observe the New River Company's Waterworks, indicated by a tall chimney, lately erected. Further on, we have another excellent view of *Highbury College*. A little distant is *Hornsey Wood House*, graced by the presence of our beloved Sovereign when travelling on this line in 1851. *Muswell Hill*, on the left, is a favourite resort of the London citizens, who enjoy a fair view of the surrounding neighbourhood from the upper part, particularly from the Grove. Dr. Johnson used to visit this spot, and one of the walks in the grounds still bears his name. At the foot of this hill a cottage is pointed out as having been tenanted by the poet Moore, a daughter of whom is buried in the churchyard at Hornsey. The church of Hornsey is modern, but the tower dates from the 16th century.

Four miles from London is

HORNSEY STATION. Near this is a cutting of 640 yards, and nearly

50 feet deep. The village is pleasantly situated amidst much picturesque scenery, the neighbourhood being enlivened with the villa residences of

HORNSEY CHURCH.

the merchant princes of London. The Bishops of London anciently had a palace at Hornsey. The church, which contains several handsome monuments, was restored or rebuilt in 1832, except the ancient tower, which, as we have stated, belongs to the sixteenth century. Of Hornsey Wood, once renowned for its chase, nothing now remains but a small coppice of trees known by that name, and leading to *Highbury Barn*, well known to the lovers of good cheer. The *New River*, an artificial cut made in the reign of James I., passes under the line at Hornsey.

About half a mile south of Hornsey Station is *Harringay House*, the seat of E. H. Chapman, Esq. Half a mile west is the *Priory*, the seat of H. Warner, Esq. The *Rectory* is in the occupancy of the Rev. R. Harvey. Half a mile beyond, in the same direction, is *Crouch Hall*, the residence of J. Bird, Esq.

One mile from Hornsey Station, is

WOOD GREEN STATION, with the Almshouses, founded by the printers and poulterers' Companies. On the left is *Highgate*, part of which and Finchley Common are in the parish of Hornsey. The situation of Highgate, on a range of hills 400 feet above the summit of St. Paul's Cathedral, has gained for it a reputation for *salubrity* which has existed

from remote times. During the Great Plague of London not one d from that fearful disease is recorded here. The town consists chief villa residences, and is indebted for its prosperity to the local attrac of its situation. The church of St. Michael, a Gothic structur considerable beauty, is seen, from its elevated position, for r around. There are almshouses, founded by the famous *Whittingto* the spot where, according to tradition, he heard the invitation of bells,—

"Turn again Whittington, thrice Lord Mayor of London!"

Highgate Grammar School was built and endowed by Sir Ro Cholmeley in 1565, and is now supported by a yearly income of a £800, with an exhibition of £50 a year, to be held by a scholar o school at Oxford or Cambridge. There are also National and Indus Infant and Sunday Schools.

The *North London Cemetery*, consecrated in 1839, is beauti situated on the brow of the hill, just below the church, and facing Metropolis, which is seen to peculiar advantage from this spot.

The *North Metropolitan Junction Railway* will connect this of country with the Metropolis in a manner highly advantageous t inhabitants of the neighbourhood.

Many historical reminiscences are connected with Highgate. O hill, Baron Thorpe was beheaded by the insurgents, in 1461. remains of Sir William Wallace, who was beheaded in 1305, were veyed to the Bishop's Castle. Arundel House was the place of co ment of the unfortunate Lady Arabella Stuart, and in the same bui Lord Bacon died. Cromwell House was built by Oliver Cromwe his son-in-law, Ireton. Nell Gwynn once resided in Lauderdale H Sir Richard Baker, the Countess of Huntingdon, Dr. Sache Coleridge, Charles Lamb, also resided at Highgate: a strange m of qualities is represented by individuals of such different bias. A Marvel is also said to have lived in this place a little before and the Restoration.

With *Finchley* is associated the name of Dick Turpin, and oth his lawless character, with whom this spot was a favourite rende The reader will also be reminded of Hogarth's representation o march of the Foot Guards on their way to Scotland in 1745, again

army of Prince Charles Stuart. This painting is in the Foundling Hospital.

Pursuing our route on the right, we pass *Tottenham Church*, a Gothic structure, built of hewn stone, flints, and pebbles, with a square embattled tower, sixty feet high, the south side of which is overgrown with ivy. There is a room over the south porch in which a pensioner used to reside; the last inhabitant was Elizabeth Hemming, who died in 1790, at the age of 100 years. The oldest monuments in the church are inlaid with brass, and are dated 1536.

About half a mile from *Tottenham Tunnel*, we reach the

SOUTHGATE AND COLNEY HATCH STATION, close to which is the Middlesex County Lunatic Asylum, a handsome brick building, with stone decorations in the Doric order, the first stone of which was laid by Prince Albert in 1849. The building covers fourteen acres of ground, with accommodation for 2,000 patients, and residences, chapel, offices, farm buildings, gas and water works, and lodges. These were completed in eighteen months. The farm includes 140 acres: its large and diversified grounds afford a variety of useful occupation, recreation, and amusement for the patients. The Queen founded, in 1849, the Victoria Fund, with £500, which has been increased by subscriptions, for the benefit of poor patients leaving the Asylum. The building is capable of accommodating two thousand patients, and nearly that number are lodged there at present. The land heretofore not brought into cultivation is now drained, and being prepared for tillage. With regard to the patients themselves, on the male side, paralysis and epilepsy appear to be the predominating causes of death, and amongst the females, diseases of the chest and old age. No one is under mechanical restraint, *which is never employed.* There are means of occupation and amusement, and facilities for taking exercise; cheerful and entertaining books are also provided. The game of cricket affords much enjoyment to the patients, and has led to the recovery of several; mention is made of one suicidal inmate, a baker, who could not be induced to occupy himself in any way until his mental and physical energies were aroused by this game. For in-door recreation, a pianoforte is in requisition, together with periodicals, &c. The dining-room is a large central apartment, one side being appropriated to females. It is pleasing to observe that constant improvements are made at Colney

Hatch in the treatment of insane patients, and every possible comf provided for them. The building has undergone several altera and has been much extended, until it has become one of the most plete and efficient establishments in the country. Many addi wards have been provided, and every requisite means employed to the attention of the patients. The efforts of Dr. Conolly, and experienced observers of insanity, have greatly aided the progr our knowledge of this malady. It is pleasing to know that the r of a humane and enlightened management have been the cure of

COUNTY LUNATIC ASYLUM.

persons afflicted with this grievous malady. The visitor will much gratification from a survey of the system pursued here. may just mention that Colney Hatch boasts of a *good* Hotel, ke Messrs. Watts and Selby.

Southgate, or South-street, so called from having been a south g Enfield Chase, is in the parish of Edmonton. The town is plea situated, about three-quarters of a mile from the Railway Statio picturesque district. The church was founded in 1615, by Sir Weld, of Lulworth Castle, who is buried here. There is a right at Southgate, on St. Giles's Day and Ascension Day; the pat vendible. In the vicinity of the town is Arno's Grove, a seat

family, containing a painted staircase, some valuable paintings, &c. Among the neighbouring mansions we may mention *Ossidge*, Bosanquet, Esq.; *Beaver Hall*, J. Thornton, Esq.; *Arno's Grove*, seat, containing numerous Etruscan vases, minerals, &c., Mrs. S. r; *Southgate House*; *Grovelands*, J. D. Taylor, Esq.; *Oak Lodge*, den, Esq.; *Oak Hill*, Lord Feversham.

e we are not far from *Chingford* and *Edmonton*, in one of the of which parish, Fore-street, is the "Bell," connected with r's humorous story of "John Gilpin." Near to Edmonton is d, formerly celebrated for its chase, now enclosed. Here are the s of a palace in which Edward VI. is supposed to have held his ; also an ancient church. Pursuing our route from Southgate and y Hatch, we are reminded of our approach to Hertfordshire, by ountry partaking less of the metropolitan character, and by the gricultural aspect visible on every side. The line passes through *Barnet*, celebrated as the birth-place of John Walker, author of Dictionary" that bears his name, and of other valuable works— hetstone, and through the *Tunnel* at *East Barnet*, which is 605 in length, to

NET STATION. The town, which is one mile and a quarter from tation, is one of the most thriving and populous places in Hert- ire, and is called High Chipping, or Market Barnet, to distinguish m East Barnet. It is a place of great historical interest. On y Common was fought the great battle of Barnet Field, April 471, between the Earl of Warwick and Edward IV., in which the r was slain, with many of the nobility, and nearly 10,000 men. e twelfth milestone beyond the town, is a pillar with an inscrip- erected in 1740 to commemorate this event.

> "Nevil, to both
> Sworn faithful, faithless found, to Henry now,
> And now to Edward, joined his potent arms;
> Now both to Britain's sovereign empire raised,
> Now from their summits plucked; till with strange deeds
> His fortunes wearying, in the fatal strife,
> By Edward's conquering arms at length he fell."

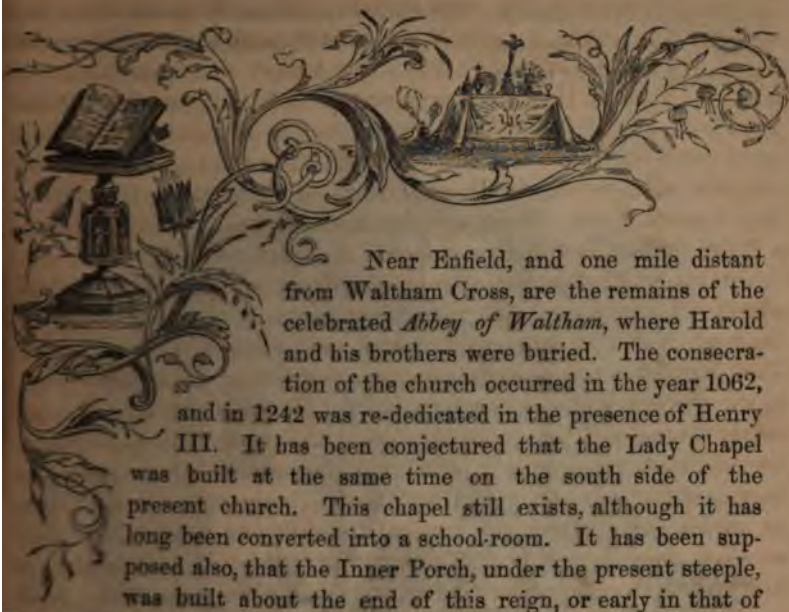
hurch of St. John, a very old building, was erected in 1400, at st of the Abbot of St. Albans, and has a low square embattled . The church contains an altar monument in commemoration of

Thomas Ravensworth, Esq., who died in 1630, and whose effigy, recumbent position, is represented on the tomb in veined ma There is a Church at Hadley, and a new Chapel on Barnet Com besides a Meeting House, a Free Grammar School, founded by Q Elizabeth, &c. Fairs are held yearly, and in September there great cattle and horse fair, to which many thousand head of beast brought, some by railway, from all parts of the country, but par larly from Scotland. There are also barracks and a Military D a Police Station, Gas Works, Brewery, and Brick-fields.

Hadley, or *Monken Hadley*, from the Saxon word Hendleagh (place), is a pretty rural village, embracing part of the High Stre the town of Barnet, and on the line of road to the Midland Cou The Church is a very beautiful structure, dating from 1494. The t at the western extremity is square, built of flint, with stone quoins nearly covered with ivy. On the top of the tower is an iron be the only remaining one, it is believed, in the country, supposed to been used formerly to supply a light used as a signal to moving n or armies. The church was restored in 1849, and is, altogether worth a close inspection. *Wrotham Park*, the seat of the E Strafford, is close adjoining Hadley, and in the vicinity are *Trent* and *Beech Hill Park*, all residences of particular attraction. On from Barnet, the train enters *South Enfield Tunnel*, 374 yards in le and one mile beyond, *North Enfield Tunnel*, 231 yards in le emerging from which it passes, after a distance of half a mile, th *South Mimms Tunnel*, one mile in length; shortly afterwards arriv

Potter's Bar and South Mimms Station, twelve miles and quarters from London. The village of *Potter's Bar*, which deriv name from an ancient bar on Enfield Chase, lies about a mile fro Station, in the parish of South Mimms. The church is a han structure in the Norman style, erected in 1835, and contains ments to the Byng family. In the village are St. John's Pars Parkfield, and the Hammonds, all agreeable residences.

The visitor who is inclined to survey leisurely the line of ra through which he passes, and to visit any spot of remarkable in in the neighbourhood of various stations, may here be reminded he is not far distant from a scene of great antiquarian celebrity.



Near Enfield, and one mile distant from Waltham Cross, are the remains of the celebrated *Abbey of Waltham*, where Harold and his brothers were buried. The consecration of the church occurred in the year 1062, and in 1242 was re-dedicated in the presence of Henry III. It has been conjectured that the Lady Chapel was built at the same time on the south side of the present church. This chapel still exists, although it has long been converted into a school-room. It has been supposed also, that the Inner Porch, under the present steeple, was built about the end of this reign, or early in that of Edward I.

Extensive alterations are being made in this church, amongst which we find the following improvements mentioned in the columns of the *Athenæum*, as being carried out by Mr. W. Burges, architect of the new works. The roof being in good repair, although by no means of the original pitch, has been retained, but the plaster ceiling has been removed, and its place supplied by boarding, painted in imitation of the only contemporary ceiling remaining, viz., that at Peterborough. The centres, however, represent the signs of the Zodiac, the Labours of the Year, and the Month. The execution of these figures is due to Mr. Poynter, son of the late architect. A new east end in the style of the early half of the 13th century will contain some beautiful stained glass. The aisle windows will be similarly decorated. It is proposed to construct a new vestry to be placed at the north side of the chancel. The nave also will undergo considerable improvements. The architect proposes to restore the tower in accordance with some old prints, which show its appearance before certain *works were undertaken* in the

beginning of this century. Extensive repairs will be made in the Chapel, and it is proposed to restore the beautiful west window its double plane of tracery.

ABBEY CHURCH, WALTHAM, EAST END.

The Abbey of Waltham was, during several reigns, a favourit of the English monarchs, who are said to have possessed a small within the parish, at a spot known in more recent times by the *Romeland*, where occasionally they sought pleasure and reti The Abbey when entire was very extensive, including many acre its grounds. The remains of the Entrance Gateway, approache old bridge, stand at some distance to the north of the church relic and the church are all that now remain standing of this onc edifice. We still, however, find in several parts of the tow relics of old houses in the Abbey domain, particularly those s in what is called *Baker's Entry*, which have an appearance antiquity.

The beauty of the scenery around Waltham, and the richnes soil, seem to have pampered the monks. They were accused of lu

s of Waltham were the theme of
y in past ages. What is now called
old's Park was celebrated in a pro-
ial leonine—

Haroldi parcus florum bene dicitur arcba."

e neighbourhood of Waltham pre-
s a few historical sites, and some
esting localities. The river Lea
the scene of Isaac Walton's pis-
y rambles; it is now chiefly re-
arkable as giving motion to a number
owder mills. The neighbouring
let of *Waltham Cross* contains one
e few that remain of the crosses erected by Edward I. in memory

INNER PORCH OF THE ABBEY CHURCH, WALTHAM.

of his queen. *Enfield Chase* is south of Waltham, and a short dista to the west is the site of the palace of *Theobald's*. To the north the remains of *Cheshunt Nunnery*.

ORNAMENTAL BUTTRESSES, ABBEY CHURCH, WALTHAM.

South Mimms, so called to distinguish from North Mimms, Herts, is two miles v from the Station. The town is situated am beautiful scenery, and contains an anc church, built in 1130, the tower of whic profusely mantled with ivy. Christ Chur modern edifice, stands in the new road, Barnet.

The train now passes Willow Green on right, and on the left North Mimms, miles south from Hatfield, containing the dences of several opulent families. In neighbourhood of this place was the ses Sir Joseph Jekyll, Master of the Rolls, married the sister of the great Lord So The body of that nobleman is interred i chancel of the church, without any inscription. *North Mimms* a mile long, was formerly the residence of the Dukes of L

REMAINS OF HOUSES OCCUPIED BY THE ABBEY RETAINERS, WALTHAM.

anger Park, the residence to which Henry VIII. and Queen rine retired during the summer of 1528, lies a little to the west. eding onwards, the richly cul- d grounds on the extensive of the Marquis of Salisbury the eye, the park being the t in the shire, and extending th sides of the road; and the t residence of the Cecils is ed conspicuously, from its ed position, on the right of

SEAL OF THE ABBOTS OF WALTHAM.

ITFIELD STATION. *Hatfield* d Haethfield in the Saxon , from its situation on a heath) ated on the declivity of a hill half a mile distant from the n, and on the banks of the Lea. The church, dedicated Ethelreda, consists of a nave, el aisles, and embattled tower, enriched with a handsome new spire,

SAXON BRIDGE, STILL USED IN *HAROLD'S PARK, WALTHAM.*

erected by the munificence of the Marquis of Salisbury, with a mortua chapel of the Cecils—Earls and Marquises of Salisbury. On the nor side is a monument to the first Earl of Salisbury, who died in 16 beautifully executed, representing the Earl in his robes, lying on a sl of black marble, which is supported by figures in white marble of t cardinal virtues, kneeling, in virgin habits, with proper attribut Beneath, on another slab of black marble, the Earl is represented a skeleton, lying on a well-sculptured mat in white marble.

On the south side of the chancel is the chapel of the Lords of t Manor of Ponsburne, in which are several monuments of the Brock and Reads, of Brocket Hall.

HATFIELD, FROM THE LINE.

Hatfield is a place of considerable antiquity, having formed part of revenue of the Saxon princes, until it was bestowed by King Edgar the monastery of Ely; in the possession of which it continued until reign of Henry I., by whom it was converted into a bishopric, whe became one of the residences of the prelate. It was then distinguis by the title of Bishop's Hatfield, and was the occasional residenc

, in the same county, with his minister, Sir Robert Cecil,
Earl of Salisbury, who erected, in 1611, the present magni-
on the site of the ancient episcopal palace, in the same style
gh House, near Stamford, in the form of a half H. It is a
brick structure, with stone copings and decorations, consisting

hall, a magnificent apartment, is supported from the sides by
each holding a shield bearing the Cecil arms. The ceiling is di
into compartments filled with profiles of the Cæsars. The great
case is covered with carvings and devices.

There is a valuable collection of paintings in this mansion; a
others, a portrait of Queen Elizabeth, having in one hand this flatt
motto, "*Non sine sole iris;*" and a portrait of Petrarch's Laur
which is this inscription—"*Laura fui: viridem Raphael fecit*
Petrarcha." The garden, adjoining the remains of the old palace,
tains a rock-worn basin of water, with a mulberry tree at each
reported to have been planted by James I., when he visited Hat
Charles the First was for some time a prisoner here. In 1835, a po
of the west wing of the mansion was destroyed by fire, when
Dowager Marchioness of Salisbury was burnt to death.

HATFIELD HOUSE, SIDE PORTION, WITH BUTTRESSES.

In 1846 Queen Victoria was a visitor to Hatfield House.

The park, which is beautifully undulated and wooded, is bounde

and flys are in attendance on the arrival of each train at
r the convenience of passengers.
's is a station on the North-Western Railway, on a branch
Watford, by which passengers are conveyed from the metro-
hour and a quarter.

only true and living God who created all things.' Here is the g
old Abbey Church, whose vast dimensions are as remarkable as
variety of its architecture; the sacred place where Matthew
wrote his history, and where a printing-press was set up within
years after Caxton had brought the new art to England. From
Abbey Tower we look, towards the east, upon the spot where the
battle between the houses of York and Lancaster was fought;
towards the north, to the site of the second battle of St. Alban's.
the low ground are the remains of the wall and fosse of Ver
Here are the ruins of Gorhambury, in which Bacon lived; and
the Church of St. Mi
in which he is buried.'

THE ARMS OF ST. ALBAN'S.

Such are some o
deeply interesting inci
that attract the strang
St. Alban's. This town, t
rulamium of the Romans, is
the most ancient places
country, and, according to
accounts, was attacked by
Cæsar in his second invasion. In the ye
Bonduca, or Boadicea, Queen of the Iceni,
head of a large body of British savages, at
the Roman colony, and massacred 70,000 p
By the Romans the town was endowed wit
privileges, being, with London, the chief to
Roman Britain. Roads branch from it in
direction. In the persecutions of Dioclesian,
a Roman officer, who was born here in the
century, was executed in 303, for some Ch
practices. Offa the Great, King of Mercia, f
a famous abbey here, dedicated to St. Alba
which the town took the name.

Among other memorable events connected with the history
Alban's, was the Parliament assembled in 1212 by King Joh
1455 Richard, Duke of York, defeated Henry VI. in a famous
here, in which the latter was taken prisoner. In 1461, in a

e Yorkists, under the king-making Earl of Warwick, were
vn by the Lancastrians, and Henry VI. recovered his liberty.
ere formerly in this town three nunneries, in one of which
) it is said Henry VIII. was married to Anna Boleyn. Sir
ndeville, the famous traveller in the Middle Ages, was born at
's.
plaiting is carried on at St. Alban's to some considerable extent,
y families are supported by it. One branch of this art is
o St. Alban's, that of the manufacture of Brazilian hats and

ABBEY OF ST. ALBAN'S, FROM THE TOWN.

owning glory of St. Alban's is the *Abbey Church*, one of the
ely ecclesiastical structures in the country. The Saxon style
ecture is preserved in many parts of the interior, but the
portions have been rebuilt in the different styles of the times
pairs became necessary. Many of the monuments were de-
during the civil wars, but such as remain are of remarkable
especially those to Humphrey, *Duke of Gloucester*, and Sir

John Mandeville. Matthew Paris, the historian, was interred in
church. The richly decorated screen, delicate tracery work, and th
brasses, together with the beautiful architectural effects of the int
are greatly to be admired.

The approach to the ancient Abbey from the town affords an exc
view of the great tower, which our artist has represented with a
effect.

ENTRANCE TO THE LADY CHAPEL, ST. ALBAN'S.

The exterior form of
Abbey is that of a long
comprising nave, choir, p
tery, two aisles, a lady-c
and two transepts; at t
tersection of which latter
the body of the church, s
the massive square,
storied tower, support
the angles by buttresse
minating in circular t
and crowned with battle
The beautiful window
mostly lancet-shaped, a
light and graceful in t
treme. The visitor wil
bably enter the Abbe
cincts by the north ga
which is strikingly pictur

Our engraving (next
represents the interior
Lady Chapel, which is now converted into a school, and presents,
neglected condition, a sad contrast to the pious care of our fore
for their beautiful temples. The visitor will here see some
decorated work, executed between 1308 and 1326.

Entering the sanctuary by the south gate, we must stop to
the massive and bold proportions of this part of the building, on
time has left an impression which may well make us muse on
world's passing pageant." It consists of a projecting porch,
ornamented, niched, and pillared, and subdivided into numerous

nts, upon which the skill has been elabo- employed.

now enter the sacred and the effect of the r to a stranger unac- ed with the rare beauties magnificent Abbey must be striking. The nave, whatever point it is con- ed, laterally or longi- lly, exhibits grandeur of and elaborate execu- It is impossible, in the l space to which our of remarkable objects nfined, to describe the ar architectural excel- of this Abbey, but the which we annex of the will give a faint im-

INTERIOR OF THE LADY CHAPEL, ST. ALBAN'S.

SOUTH ENTRANCE, ST. ALBAN'S.

pression of its richness. The fresh florid painting of the chesnut ro upon which not a brush has been employed for upwards of three cen turies, is very remarkable, and shows that the secret of mixing colou for the eye of posterity has not descended to the present day.

INTERIOR OF THE ABBEY OF ST. ALBAN'S, SHOWING THE GREAT WEST WINDOW.

There is one point particularly deserving of notice as a boundary- between two grand epochs in ecclesiastical architecture, seen wh

the Saxon and the Gothic meet in the same column. From the great western entrance, the exterior of which forms the subject of the preceding engraving, right and left the massive clustered pillars of the nave have been evidently chiselled at vast labour and expense, out of the original Saxon, thus engrafting the new style upon the primitive

SOUTH-WESTERN ENTRANCE TO ST. ALBAN'S ABBEY.

stock. The point where the Gothic ceases and the Saxon remains, and marking where the progressive work of transformation had been arrested by some public event, forms an admirable contrast, and shows the Gothic to infinite advantage. But the Saxon arches, still untouched by the reformer's chisel, will be viewed by every lover of native art as precious relics of antiquity.

The extreme length of the church externally is very great, no less than 548 feet 4 inches; and the views in the nave and its aisles are very

striking in consequence. The great west window, represented in view of the interior of the Abbey, is remarkably beautiful. St. C bert's screen, which divides the nave from the choir, forms an impo boundary to the *coup d'œil*.

The choir, comprising the whole space between the western ar the tower and the great altar, is very grand. Flanked by two mag cent tombs right and left; closed on the east by the celebrated a screen, canopied, niched, and carved, with all the fanciful but clas elegance of an ivory fan, the spectator is almost bewildered by profusion of objects meet his gaze. screen of the g altar, or "Wallingf screen," was begun finished in the reig Edward IV., and is of the best speci remaining of that ep The pulpit is of ca oak, not of a re date. On the rig the altar is the ton Abbot Ramryge, a borately carved G

FONT AT ST. ALBAN'S ABBEY.

chapel or shrine. Opposite to this, and accompanying the corresp ing arch, is another but less ornamental shrine, to the memory of A Whethamstead. Erected against the south wall of the church, w a door formerly existed, is a beautiful piscina, which has all the n of antiquity, and, as a fragment of the colossal abbey, is of the hig interest. On one of the windows of the south aisle was a represent of the martyrdom of St. Alban in painted glass, only a few fragu of which remain. On the wall below was an inscription, now al obliterated. Deeply cut in the pavement near this spot, is the follo inscription:—

ST. ALBANUS VERULAMENSIS ANGLORUM PROTOMARTYR XVII. JUNII CCXCVII.

There are many interesting records and peculiarities in the ch which should not be overlooked. The visitor, without being conde

ings may be found.

r leaving the Abbey precincts, and passing the gatehouse—a
r building, once used as the prison of the Abbey, and now as that
borough—we approach the venerable church dedicated to St.
l, which stands at the bottom of the town, on the way to Dun-
and within the walls of the ancient Verulam. It contains a
ent to the memory of the illustrious Lord Bacon, who, together
s mother, was interred in this fabric. The epitaph is supposed
been written by Sir Henry Wotton.

nly remaining edifice within the town of St. Alban's which is
of particular notice, is the church of St. Peter, which is also of
tiquity. Here lie the remains of many of those slain in the
ody battles which, in the wars of the Roses, were fought in the
of this town.

Cotton, the poet, and the friend of Cowper, was buried here.
phen's Church lies south-west of the town on the Watford-

are several public buildings in St. Alban's, including Assembly
Town Hall, and Market House, Schools, Chapels, and Meeting-
Bank, and Clock-tower, which is a remnant of a palace called
ury. Many fragments of the city walls still remain.

mbury House was the seat of the great Lord Bacon, now of the

At Hatfield there is a

BRANCH LINE TO HERTFORD,

on the right of the Great Northern Railway Main Line, a distan nine miles and three quarters, by COLE-GREEN AND HERTINGF BURY STATIONS. HERTFORD lies sheltered in the valley of the and consists of several neat and clean streets built with tole regularity. Among the principal buildings are All Saints' an Andrew's Churches, Christ's Hospital, the County Gaol, Hou Correction, Town Hall, Sessions House, Market House, &c. H bury College is about two miles and a half from Hertford; the ings cost £70,000.

Numerous mills are situated on the rivers Lea and Mimram. most important articles of trade, besides malt and flour, are and wool. One of the largest corn-markets in the kingdom is here. In the reign of Elizabeth (25th) the Michaelmas term adjourned from London to Hertford, on account of the plague tha raging in the metropolis, and all the Courts were kept at the In this fortress—of which a few remains still exist—were co John, King of France, and David, King of Scots; and here di 1362, Joan, his Queen, sister to Edward III. It was succes possessed by Joan of Navarre, Catherine of France, and Marga Anjou, Queens of Henry IV., V., and VI. This castle was erec the tenth century, but the present one was built in the ti Charles I.

At Hertford the line of railway is joined by the Eastern Co Railway.

From Hatfield there is also a

BRANCH LINE TO LUTON AND DUNSTABLE,

on the left of the Great Northern Railway Main Line. Sever from Hatfield we reach WHEATHAMPSTEAD STATION. This famous in history from the Barons assembling here, in 1312, a Edward II. and Piers de Gaveston. The parish is intersected river Lea. In the immediate neighbourhood are *Lamer Park*, th of Drake Garrard, Esq.; the *Castle*, Mackie End, the prope Drake Garrard, Esq.; also the Park, the residence of B. Baxendal

Two miles and a quarter from Wheathampstead we reach

HARPENDEN STATION. The village stands on an eminence, about one mile from the railway station. The Race-course is adjacent, with a good Club House. In the neighbourhood is *Rotham Park*, one mile and a half from the station, the property of — Lawes, Esq., lord of the manor. About the same distance from the station is the *Hyde*, the residence of Colonel Ames.

Two miles and a quarter from Harpenden we reach

NEW MILE END STATION, and three miles distant,

LUTON STATION. Luton is a town whose recent importance has been wholly created by the straw-plait trade. In 1781 Johnson and Boswell went to Luton Hoo, the mansion of Lord Bute. It was the birthday of George III., "and," says Boswell, "we dined and drank His Majesty's health at an inn in the village of Luton." This "village," beautifully situated amidst gentle hills, and deriving its name from the river Lea, which rises in the parish, was noticed in the topographical works of the last century for its fine Gothic church, but not for its peculiar industry. The straw-plait market of Luton is held on every Monday throughout the year, at eight o'clock, from Lady-day to Michaelmas; at nine, from Michaelmas to Lady-day. It has been described as a scene combining many features of the picturesque, the streets being crowded with buyers and sellers. Bedfordshire became the chief seat of the manufacture from the peculiar fineness of its wheat straw, in which quality Hertfordshire participates. The due proportion of silex in the straw, which gives strength without brittleness, decides this preference over the straw of Essex, which is, nevertheless, a straw-plaiting county. One firm, that of Messrs. Vyse and Sons, has establishments at Luton, St. Alban's, Harpenden, Houghton, Redbourn, and Bedford; in 1859 these gentlemen purchased weekly 15,500 score yards of plait, whose production had employed 3,000 plaiters; they converted weekly 11,000 scores of the same into 8,000 hats and bonnets by the labour of 700 sewers, exporting the other 4,500 scores of plait, and bought weekly 1,250 complete hats and bonnets, the production of which had employed 180 plaiters and 100 sewers. In Luton there are several establishments of equal importance to that we have mentioned, which have their branch factories at Dunstable and other towns; there are, *besides, in Luton,* a very large

number of smaller manufacturers. The organization of the straw-pla industry is more extensive and complete at Luton than elsewher Luton is the metropolis of the trade, which extends for twenty mil round. The stranger in looking at Luton, from a pleasant hill on t east, will at once see the great extension of the town in vario directions. There is "New Town," and there is "High Town," ea composed of small houses, in streets laid out at right angles—a ve different place from Boswell's "village."*

The parish church is a large and handsome building, forme belonging to St. Alban's Abbey. It contains an elegant stone bu tistry; also a chapel, built by Sir John Wenlock, about 1461. T church contains several tombs and brasses. In the parish of Lut are the ruins of the residence of the Wenlocks, called Summeries Cast

Pomfret, the poet, is said to have been born at Luton, of whi parish his father was vicar.

On the left is *Luton Hoo*, formerly the seat of the Boleyns, aft wards of the Napiers, late of the Marquis of Bute, and now J. S. Leigh, Esq. The Hoo House is beautifully situated, and is a ve handsome building.

On the left, about a mile from the town, is *Stockwood Park*, the s of J. S. Crawley, Esq.

Three miles and three quarters from Luton is

Dunstable Station. Dunstable, a market-town and parish Bedfordshire, is situated east of the Chiltern Hills, at the foot of range in the centre of the chalk-downs. It is a town of great antiqui and was a British settlement prior to the invasion of the Romans, whom it was called *Forum Dianæ*. The Queen is lady of the man The church is one of the greatest curiosities in the kingdom. style of architecture is of the Norman period, and it was built in reign of Henry I. Over the altar is a magnificent picture of Lord's Supper, by Sir James Thornhill. Sentence of Divorce betw Henry VIII. and Catherine of Arragon, was pronounced in Dunsta Priory, by Archbishop Cranmer, in 1533. Dunstable was the bir place of Elkanah Settle, a well-known dramatist and political writ Most of the houses are built of brick, and many of them have

* This sketch of Luton is from an excellent article on "Localized Handicrafts," in Companion to the British Almanack for 1861.

tiquated appearance. The four principal streets take the direction the four cardinal points. Besides the straw-plait manufacture, unstable is celebrated for its extensive business in whiting, and it is roverbial for its larks, which are of large size, and are sent to the ondon market in great quantities. Dunstable has, in some degree, een superseded in its straw-plait manufactures by Luton. The "Dunstable bonnet" is no longer exclusively famous; still there are arge factories for this branch of art, which have an extensive business. A new Hotel, much wanted, is about being erected in Dunstable. At Dunstable the line of railway is joined by a branch of the London nd North-Western route from Leighton.

From Dunstable we now return to the

MAIN LINE

t Hatfield, and leaving the station, we would direct the traveller's ttention to the picturesque scenery which presents itself on each side f the country, varied at intervals by undulations, thickly covered with luxuriant vegetation. We pass on the left *Wheathampstead*. Within half a mile of Welwyn, the train crosses the *Digswell Viaduct*, over a

DIGSWELL VIADUCT.

charming valley. It is a remarkable structure, 1,563 feet in length, and consisting of forty arches of thirty feet span each, and about ninety feet high. The view of this gigantic viaduct is very fine, when

seen in connexion with the highly picturesque country in which it situated. At Robbery Wood, two miles from Digswell, there is a brid of seven arches, fifty-seven feet six inches in height from the river.

We now reach

WELWYN STATION; the small town being situated in a valley abo one mile and a half north-west of the station. *Welwyn* is chie remarkable as having been the residence of Dr. Young, author the "Night Thoughts," who was rector of the parish. Lady You died in 1742; and in 1765 the Doctor's remains were laid by her s in the chancel of the church, where a monument is erected to memory of both. The site of the Doctor's house is now occupied b mansion in the possession of J. D. Lee, Esq. Close to Welwyn *Tewin*, a village pleasantly situated in a rural district, near to wh stands Tewin Water, belonging to Earl Cowper, and the residence John Currie, Esq. The visitor to *Panshanger* will find much to adm Independent of the attractions of the mansion, and an excell collection of paintings, the park and grounds are very beautiful. the private garden stands a famous oak, nineteen feet in circumfere at a yard from the ground, and said to contain 1,000 feet of timb

TOMB OF LADY ANNE GRIMSTONE.

Tewin churchyard, ab one mile and three qu ters from Welwyn S tion, contains the to of the Lady Anne Gr stone, remarkable f the circumstance of veral trees (ash sycamore) of consi able dimensions hav grown through vari parts of the stonew and displaced the sto and iron railing. The churchwardens have erected a wooden fe round the tree, for the purpose of protecting it.

The superstitious credulity of the neighbouring peasantry of the generation, was naturally excited by appearances so unusual, and t have handed down a legend to their sons, in which it is sought

account for the phenomenon. The story is a simple one:—It is said that Lady Anne was an unbeliever, and was wont to say that, "if the Sacred Book were true, seven ash trees would grow out of her tomb." The result evidently—as in many similar cases—gave rise to the legend. The following inscription is still legible on the tomb:—"Here lyeth interred the body of the Right Honourable Lady Anne Grimston, wife to Sir Samuel Grimston, Bart., of Gorhambury, in Hertfordshire, daughter to the late Right Honourable Earl of Thanet, who departed this life Nov. 22nd, 1713, in the 60th year of her age."

Lockleys, one mile north-west of Welwyn Station, is the residence of G. Dearing, Esq., the inventor and patentee of continuous railway rails by soldered joints. *Digswell House*, half a mile south-west, is the property of Earl Cowper, and is occupied by F. Pryor, Esq. *Myrtle Hall*, one mile and three quarters, is the seat of W. Smith, Esq. *Danesbury*, two miles north-west, is the property of W. J. Blake, Esq. The *Frythe*, two miles south-west, is the residence of W. Wiltshire, Esq., late M.P. for Yarmouth. *Codicote Lodge*, three miles north-west, is the seat of J. Busk, Esq. The *Node*, four miles north-west, belongs to William Reid, Esq., head of the eminent London brewers of that name. *Knebsworth*, situated four miles and a half north-west, is the seat of Sir Edward Bulwer Lytton, the celebrated author. The park abounds in splendid specimens of trees, and the mansion and gardens are well worth inspection, for which an order can readily be obtained. The Picture Gallery contains some admirable specimens of art, while the curious in antiquities will have an opportunity of seeing Queen Elizabeth's bed, lamp, &c.

The church at Knebsworth, of which we annex an engraving, is a most interesting building.

The *Hoo*, situated five miles and a half north-west of Welwyn Station, is the seat of Lord Dacre, master of foxhounds. The Hoo races are held in his park annually. *Ayot St. Laurence* is about four miles west of the station. The ruins of an old church at this place will gratify the visitor. Lieutenant-Colonel Cavendish has a residence at Ayot St. Laurence. *Brocket Hall* is three miles and a half south-west of Welwyn Station. It is a seat of the late Lord Melbourne, and is now the property of Lady Palmerston. The Marquis of Abercorn is the present occupant. In Brocket Park may be seen some of the finest specimens

of English oaks in the kingdom; one, in particular, is shown as t
bound of liberty allowed to the Princess Elizabeth by her sister Que

KNEBSWORTH CHURCH.

Mary, during the imprisonment of the former at Hatfield House, and
is said that Queen Elizabeth received the tidings of her sister's de
while seated under this tree. The gardens are well worth seein
pines, grapes, &c., being brought to extraordinary perfection he
Woodhall Park, six miles east, is the seat of Abel Smith, Esq., M
for Hertford.

The present rector of Welwyn is the Rev. Sir Brooke Boothby.

Locksley Hill, or Digswell Tunnel, is 450 yards in length, passi
through which the train dashes across the *Harmer Green*, or *Welw
Tunnel*, more than half a mile long; shortly after which we arrive at

STEVENAGE STATION, distant twenty-eight and a half miles south-e
from London. The town is pleasantly situated on the line of the Gr
Northern Railway and road. The church is approached through a f

rth of the Station. The name is derived from the river Hiz, ows through this district. The parish, which is extensive, has atly improved from its proximity to the railroad. A good trade flour, malt, and brewing is carried on; and the manufacture of it occupies many hands. The town contains a Town-hall, Gas-Water-works, Public Schools, Infirmary, Chapels, Meeting-fine Park, &c.

Church is a handsome stone structure, occupying the site of a ient fabric, near the middle of the town, and apparently of the enry VI. or Edward IV. At the west end is a massive tower, ne feet in diameter, terminated by a small octagonal spire. le fabric is embattled, and the principal chancel is additionally ted by pinnacles. The north and south porches are finely . The latter has a groined roof, with canopied niches, and naments in front. The sepulchral monuments are very nume- l interesting, including some brasses of the 15th and 16th cen- The font has been ornamented with figures of the Twelve Apos- er niches, but they are now much defaced. The altar-piece, a ble production, is said to be by Rubens. Near this church e Priory of *Biggin*, founded for nuns of the Gilbertine order, mall priory for White Carmelites, of which a few remains are Hitchin was one of the possessions of the Mercian kings, and

HITCHIN.

erected in 1600; *Welbury House, Ippoli*
Ickleford House, &c.

At Hitchin, the

BRANCH LINE TO CAMBRII

commences, by BALDOCK, ROYSTON, and S
a distance of twenty-six miles and three
We merely introduce this route for the
briefly describing CAMBRIDGE, as mar
readers may naturally wish to visit that
seat of learning, which has produced so n
trious sons of genius. There is little t
the traveller at the intervening stations,
should diverge from his railway journey at
to visit *Saffron Walden*, which possesses
finest country churches in the kingdom, a
End, a station on the Eastern Counties

latter place is the famous mansion of the late eminent Lord ooke. AUDLEY END, the most celebrated of the mansions in takes its name from Sir Thomas Audley, Chancellor to King VIII., who is believed to ixed his residence there, al-, as the late Lord Braybrooke s in his history of this house, t cannot now be established." Thorpe was the builder, and his vast bow-windows, long emolished, is represented in nley's view of the original In 1666 the house was sold rles II., and four years after-the court was regularly esta-there. In 1721, three sides grand quadrangle were demo-by Sir John Vanburgh, with chens and offices. The best of the house is seen from the ad to Newmarket and Cam-

BOW-WINDOW AT AUDLEY END (NOW DEMOLISHED).

Upon crossing the modern which leads to the town of Walden, a gate to the left leads up to the house. It bears e of 1616. The way in which the noble trees hang their branches richest profusion over it, renders it a most picturesque object. A cular walk leads to the mansion. The doors, both back and f the principal entrance, are exceedingly fine specimens of wood They are extremely massive, and carved in a geometric pat-he circular portion above being filled in the front door with emblematic of the arts of peace, that of the back leading into the representing war in a chariot drawn by wolves.

ring a small vestibule, the great hall lies to the right; its prin-ature is the magnificent oak screen, which occupies the north The Hall is wainscoted, and is hung around with family pictures. e the fine old wooden screen is an open one of stone. The large bow commands a fine view of the *grounds, the* river Cam, and

the ancient stables beyond, which are of red brick, and exceedingly p
turesque, embowered
they are in ancient tre
The chimney-piece is
excellent keeping with t
rest of the apartment, a
is of fine carved work a
brilliant gilding. The su
of rooms in connexion w
the saloon are fine, a
contain some good ceilin
and fireplaces. In one
them is a chair, once t
property of Alexand
Pope; its history is t
on a brass plate insert
in the back. The upp
and lower floor of this w
are connected together
a fine oak staircase.
reaches from the ground

DOOR IN THE PRINCIPAL ENTRANCE, AUDLEY END.

ENTRANCE GATE, AUDLEY END.

upper story in such a manner that a person ascending the whole ht goes two and a half times round the well which it includes. A

ANCIENT STABLES AT AUDLEY END.

lar staircase of oak, of a plainer character, is in the opposite wing. Chapel is in "Strawberry Gothic." The Library con- a valuable collection of ks. The paintings through- the house are not very re- kable. The Park is extensive, contains some magnificent trees. Nearly opposite the nce gateway is the entrance the village of Audley End, h is approached through an ue of trees, which hides it the road. The first view humble habitations is very ing, and as simply antique as be. Its old gables and -bowed windows, over which the honeysuckle and ivy, at once the age of their ion, and carry the spectator to the days of Elizabeth. ancient brick tenements,

POPE'S CHAIR, AUDLEY END.

picturesque in decay, were doubtless originally erected for purp charity, and perhaps put under the control of the monastery, hav especial endowment.

Should the traveller prolong his stay in Essex, attracted antiquarian reminiscences, he will probably visit *Horeham Hall*, old mansion in the parish of Thaxley, and about two miles south-w the church. The structure was erected by Sir John Cutt, or immediately preceding or early in the reign of Elizabeth. The pr afterwards came Smyth family, of Hall. In the gres is preserved the saddle of Queen beth. The pomme wrought metal, an been gilt; the s of velvet, now in a ous condition. Princess, Elizabet tired to Horeham as a place of refug ing the reign of her Mary. A room first floor of the tower represented engraving on p. shown as that in Elizabeth resided. exterior features building are cha istic of that period strength and se

OAK STAIRCASE, AUDLEY END.

began to give way to domestic comfort and elegance. The Hall is and has a minstrel's gallery. (Our illustrations are on page 40.)

Resuming our railway journey, it is time that we should int the traveller to

VILLAGE OF AUDLEY END.

CAMBRIDGE.

BRIDGE. The county town of Cambridgeshire derives its name he river Cam, by which it is divided into two unequal parts. It

ANCIENT ALMSHOUSES, AUDLEY END.

to the magnitude *and beauty of the buildings* belonging to the

University, with the extensive walls and gardens attached to them

SIDE-SADDLE OF QUEEN ELIZABETH, AT HOREHAM HALL.

Cam flows t
the town, ente
the south side.
all the colleg
grounds are
west side of th
The streets ar
ly narrow an
ing, and the
are irregularl
but Bridge-st
Andrew's, and
pington stre
broad, airy, a
sant. At the

end of the market-place is the *Guildhall*, a dull-looking b

HOREHAM HALL, ESSEX.

dating from 1747. In front is the conduit, supplied with

Shelford, brought thence by the famous Thomas Hobson, the
er, from whom is derived the popular saying of "Hobson's
ce." In St. John's-street is *All Saints' Church*, which con-
s a monument to Henry Kirke White. In Trinity-street is *St.*
hael's Church, which contains a fine screen and rich architectural
ils. On Senate House-hill the visitor will have a fine striking view
some of the most interesting College buildings, including King's

NEW FITZWILLIAM MUSEUM, CAMBRIDGE.
(*From a photograph by W. Nichols.*)

ge Chapel—of which we shall speak anon, and the *University*
ch of great St. Mary's, which is also used as the parish church at
ent hours of the day. Opposite King's College stands *St. Edward's*
ch, in which good old Latimer preached. Near to this building is
Perse Grammar School, for the children of the townspeople. In
ppington-street is *Botolph's Church*, which contains several interest-
monuments. Near the Fitzwilliam Museum is *Addenbrook's Hos-*
. Near Christ's College, in St. Andrew's-street, is *Great St.*
rew's Church, and further on is *Trinity Church* and the *Church of the*
ly Sepulchre, one of the four round *churches in England*, a Norman

edifice, full of the deepest interest to antiquarians, &c. To the Cam Society is due the merit of having rescued this fine old building from de In this neighbourhood is also *St. Clement's Church*, with a rich d way on the south side. Near Magdalen College are *St. Giles's Chu* an ancient building, and *St. Peter's Church*, one of the oldest ecclesi edifices in Cambridge, but now greatly decayed.

The *Senate House*, the *Public Schools*, and the *Library* are the pr pal public buildings belonging to the University.

The Senate House is an elegant building of Portland stone, fou in 1722. The public schools were commenced on or near their pre site in 1443; they form three sides of a small court. The whole q rangle of apartments over the schools is occupied by the Public Lib The *Botanical Garden* is on the south-east side of the town. The tomical School contains a large collection of rare and valuable pre tions. The *Observatory* stands on an eminence about one mile fro College Walls, on the road to Madingley. The *Pitt Press*, in Tr ington-street, is a fine building, completed in 1833. The *Ne William Museum* is in the same street, in front of the grove of P house College. The edifice is of the Corinthian order, covering an of 160 feet in length by 162 feet in depth. The façade is remar fine. The broad flight of steps ascending to the portico elevate latter considerably above the adjacent buildings; it is imposing proportions, and a great richness of effect is given by the sculpture which it is decorated.

Of the Colleges, the union of which forms the Unive *St. Peter's*, called Peter House, is the most ancient. It was fo in 1257, and consists of three courts, but with no archite pretensions. *Clare Hall* was founded in 1326, rebuilt in conseq of a fire in 1342, and reconstructed in 1638. It stands on th bank of the Cam, over which it has an elegant stone bridge, l by an avenue into a lawn, surrounded by lofty elm trees, and com ing a prospect towards Coton and Madingley. *Pembroke Hall* from 1343. It stands on the east side of Trumpington-street, opposite to St Peter's: the Chapel is considered to be among th elegant and best proportioned in the University. *Caius Colle* consolidated with Gonville Hall in 1558. The south court, and remarkable gates of Grecian architecture, built by Dr. Caius,

GATE OF HONOUR, CAIUS COLLEGE, CAMBRIDGE.
(*From a photograph by W. Nichols.*)

...aders, are supposed to have been ... John of Padua, architect to ...VIII., and to be the only works ...now remaining in the kingdom. ...apel is small, but is greatly ... *Trinity Hall* was founded in ... The Chapel is remarkable for ...ly-painted altar-piece. *Corpus Christi College* was founded in 1351. ... a lofty and massive tower at ...tremity, with a superb gateway ...entre, flanked with towers. The ... is richly ornamented, as is also the Chapel.

...'s College, the most magnificent foundation in Cambridge, ...anded in 1441, by Henry VI. *The several buildings* of this

College form, altogether, the most superb group in Cambridge. the south of the old court stands the CHAPEL, one of the fin specimens of the later style of English architecture in the kingd It was begun in 1441, by Henry VI., continued by Edward I Richard III., and Henry VII., and completed with money bequeat by the latter for that purpose in 1515. Its extreme length is feet, forming the north side of the grand court; breadth, 84 fe height, to the summit of the battlements, 90 feet; to the top of

KING'S COLLEGE CHAPEL, CAMBRIDGE.
(*From a photograph by W. Nichols.*)

pinnacles, 101 feet; and to the summit of the corner towers, 146 Of this magnificent edifice nothing excites greater admiration the vast roof of stone, wrought like fanwork, which hangs abov spectator without the support of a single pillar. It is also remar for the magnitude and beauty of the painted windows, of which are twelve on each side, nearly fifty feet in height, which, wit window to the east, are fitted with various subjects from Scri history. This beautiful glass was put up in the early part of the of Henry VIII. *Queen's College* was founded in 1448, and re-fo in 1465. The grove and gardens are particularly beautiful, lyi both sides of the river, and connected by a wooden bridge of one

greatly admired for the beauty of its construction. *Catherine* s founded in 1475; *Jesus College* in 1496. In *Christ's College* was a student, and the garden contains a mulberry-tree planted *St. John's College* was founded in 1511; the buildings, which tly of brick, form three courts; the first and most ancient is from the street by a handsome gateway, surmounted by turrets ith the foundation. The Chapel occupies the north side of the

KING'S COLLEGE CHAPEL, FROM KING'S-PARADE, CAMBRIDGE.
(From a photograph by W. Nichols.)

rt. The spacious gardens and extensive walks belonging to ge lie on the west side of the river, over which there is a e stone bridge, built after the style of the Bridge of Sighs at *Magdalene College* was begun in 1519, and afterwards endowed *Trinity College* occupies the site of two colleges, Michael nd King's Hall. In 1546 both these colleges were suppressed, he same year the magnificent establishment of Trinity College nded by Henry VIII. The quadrangle called King's Court menced in 1823, and completed at a cost of £40,000. The

Chapel, the Hall, and the Master's Lodge, in the first court, are and lofty buildings. The latter has, since the time of Elizabeth the residence of the Sovereign, when the University has been hon with a royal visit. The Library, in Nevile's-court is a magn room, 200 feet in length, and proportionately lofty. *Emanuel* was founded in 1584; the buildings are chiefly modern. *Sidney-College* had Oliver Cromwell for a student. *Downing Colleg* founded by Sir George Downing, by will dated 1717; the first was laid in 1807.

Bishop Jeremy Taylor, and Cumberland, the dramatist, were n of Cambridge. Two members of parliament are returned by the and two by the University. Stourbridge Fair, held annually at

ST. JOHN'S COLLEGE, CAMBRIDGE.
(*From a photograph by W. Nichols.*)

bridge, in September, is one of the most ancient, and was, for one of the largest in England. By the Municipal Act of 183 corporation consists of a Mayor, High Steward, Recorder, ten Alde thirty Councillors, a Town Clerk, and other officers. Should the prolong his stay at Cambridge, he will find many agreeable walk rides in the neighbourhood. Space will only permit us to me

ity, and may be considered a good example of the gable-
of the 16th century. A doorway in the courtyard conducts

ST. JOHN'S COLLEGE, BRIDGE OF SIGHS, CAMBRIDGE.

(*From a photograph by W. Nichols.*)

shelter in the ancient house of the Huddlestons. Her pursuers re
the Hall a shor
after she had q
it, and in thei
burnt the hou
the ground.
Church of Sa
contains the to
Sir John Hu
ston, who spe
greater part
fortune in the s
of Philip of
after Mary's
There is an in
tion on a brass

COURTYARD AND CHAPEL AT SAWSTON-HALL, NEAR CAMBRIDGE.

Before l
Cambridge, we
be permitted to direct the visitor's attention to the eminent
SELLING AND PUBLISHING FIRM of MESSRS. MACMILLAN AND CO., whose name in connexion with the popular periodical, "Macmillan's Magazine," edited by Mr. Masson, with consummate ability, and published under their auspices, together with the sterling works produced at their press, is now European. The traveller will obtain any information he may desire to have respecting Cambridge and the neighbourhood at this establishment.

TOMB OF SIR JOHN HUDDLESTON, IN SAWSTON CHU

We would also advert, in

of commendation, to the beautiful photographic productions of W. NICHOLS, of Cambridge.

e newspaper press of Cambridge is ably represented by the RIDGE INDEPENDENT, a long-established journal, circulating very sively in the counties of Cambridge (and University), Hunting- Bedford, Northampton, Norfolk, Hertford, Suffolk, Essex, and oln. It is published weekly by Mr. Henry Smith, 11, Market-hill. aving Cambridge and its pleasing associations (to which we shall additional space and illustrations in our next Edition), we now to HITCHIN, and pursue from thence the

MIDLAND LINE TO LEICESTER,*

hich we purpose to *glance only*, having in preparation a separate e devoted to this very important railway.

aving the Hitchin station, the Midland line is entered upon a lofty

E MIDLAND RAILWAY, like most of the large railway systems, consists of several hich were originally constructed by independent companies, and are now amalga- with or leased to the Midland Company.

undertakings so blended were the North Midland, which extended from Derby to the Birmingham and Derby, which joined the towns of Birmingham and Derby, ranch to Hampton; the Midland Counties, which connected Derby with Nottingham, er, and the line of the London and North-Western Company at Rugby; the Bir- m and Gloucester, serving the towns whose names it bore; the Bristol and Glou- connecting those towns—(this line, when extended to Gloucester, was constructed road gauge, and was subsequently altered to the narrow gauge to prevent the cost onvenience of the break which occurred at Gloucester); the Leeds and Bradford, extension to Colne—the North-Western, connecting the last-named railway with r and the port of Morecambe; the Sheffield and Rotherham; the Ambergate, and Rowsley; the Erewash Valley Railway; the Mansfield and Pinxton, and the r and Swanington.

Midland Railway has, since the union of the undertakings which gave it that title, d its public usefulness by many important branches, viz., that from Nottingham to , one from Syston to Peterborough, another from Nottingham to Mansfield, a fourth r Derby to Ripley, an extension of the Leicester and Swanington joining the towns ester and Burton, and by an important extension from Leicester to Hitchin, through By arrangement with the Great Northern Company, the Midland Company's system nded to the metropolis, where an extensive plot of ground is laid out for the accom- n of merchandise and minerals, having connexion with the North London and other olitan lines, and also with the Regent's Canal, by which the traffic brought into s can be readily distributed over the metropolis and into the docks and rivers.

anals, the Ashby and the Cromford, form part of the Midland undertaking.

otal length of the railways forming the Midland system is 619½ miles, and in addi- 1½ miles of the railways of other companies are used by the Midland.

addition to the above, a line is now in course *of construction, and will be* opened about me this book is *published, from the Erewash Valley line to Clay Cross*, by which the *e from London to Yorkshire and the North will be diminished* six miles.

embankment, formed of the chalk from the neighbouring chalk form tion. Four miles from Hitchin, we reach

HENLOW STATION. The parish is in Bedfordshire, four miles and half south-west of Biggleswade. Two miles and a half is

SHEFFORD STATION. In a field adjoining the town, a great numb of very beautiful Roman relics have been found, from which a selecti has been formed by Mr. T. Inskip, an inhabitant of the town. A Roma encampment, a mile distant from Shefford, at Stanford Bury, has al furnished some of the finest specimens of Roman glass, &c., extant. A Shirbeck Sluice, a smith's forge, the remains of some ancient tan va a large quantity of horns, and soles of shoes of a peculiar shape, wit pointed toes, were found, of the time of Richard II. The remains of church have, also, been discovered.

Another line, joining this railway at Ingleton, in Yorkshire, and connecting it with t Lancaster and Carlisle line, near Longill, is also rapidly approaching completion, and w be opened this summer.

By the opening of these two links, the position formerly held by the Midland line as main road between the metropolis and Scotland will be restored; the distance betwe London and Edinburgh by this route, through Bedford, Leicester, Chesterfield, Le Ingleton, and Carlisle being 405 miles; and between London and Glasgow, by the sam route, 408¼ miles.

Another important line is also in course of construction, extending the present line fro Rowsley, through the most picturesque portion of the Peak of Derbyshire, to Buxton. Th works upon this line are being prosecuted most vigorously, and it will be opened in th summer of 1863.

The capital expended upon these lines of railway to the end of 1860 was £22,122,18 including the capital of the North-Western line.

The revenue of the Company for the year 1860 was £2,133,440, of which £725,929 w derived from passenger traffic, £916,637 from merchandise and cattle, and £490,874 fro minerals.

The working expenses of the line for the same period were £968,594, leaving a profit £1,164,846, which, after payment of the preference charges, yielded a dividend upon th ordinary stock at the rate of 6¾ per cent. for the year.

As may be imagined, the rolling stock employed in moving the traffic of this undertaki is very large; it is calculated that if the engines and vehicles employed were placed in on line touching each other, they would extend a distance of 100 miles.

The excursion traffic has been very largely encouraged and developed upon this railway the receipts from this branch of traffic alone having realized 47 per cent. more in the seas of 1860 than the average of the three previous years.

The principal receiving depôt for goods in London is entered on one side from Aldersgat street, and on the other from Falcon-square, and has been recently remodelled expressly f the reception of merchandise, and is one of the most complete and convenient depôts the City. There are also extensive receiving houses in the Minories and the Borough, an *many* other minor offices for the reception of goods and parcels. The goods carried by th *Company to and from London* are collected and delivered by its own vehicles and servant *without the intervention* of any agents or carriers.

miles and a quarter from Shefford is SOUTHILL STATION, and iles and a quarter beyond

DINGTON STATION. The church at Cardington is a neat edifice, square tower, and a peal of eight bells. The interior contains asses in memory of the Byssy and Harvie families. There are o handsome monuments to the Whitbread family, one of which Bacon; there is, likewise, a tablet to the memory of the philan- t, John Howard, who resided some years in the village. Two nd a half from Cardington we reach

FORD STATION. The town is situated on both sides of the river hich is navigable to the German Ocean, and is a place of great ty, having been the burial-place of Offa, king of Mercia. A castle iderable strength was erected here soon after the Conquest. The s in the midst of the rich tract of country called Bedford Vale, ntains many ancient and well-built houses. It is divided into six s, with as many churches; those of St. Paul, St. Peter, and St. rt are on the north side of the river; those of St. Mary and n the Baptist on the south, and Trinity on the north-west. The *of St. Paul* is a fine building, with a handsome tower, surmounted ofty octagonal spire. *Trinity Church*, a beautiful building, was about twenty years since.

calculated that more than one-half of the inhabitants of Bedford ssenters. There are, accordingly, several chapels belonging to dependents, the Methodists, the Baptists, and the Moravians. mortal JOHN BUNYAN was ordained co-pastor of the Old Inde- t Meeting-house in Mill-street, with Samuel Fenn, in 1671, and ed to fill that situation until his death in 1688. His memory is ently venerated by the congregation, and the chair in which he sit is still preserved in the Vestry as a sort of relic.

andsome bridge of five arches replaces the ancient thoroughfare e Ouse, where stood the borough prison in which Bunyan was d for preaching the gospel. A ring was found on this spot years ago, with Bunyan's name inscribed upon it, and the figure ith's head, thus confirming, in a great measure, a disputed point whether the author of the "Pilgrim's Progress" was really d in this prison or not.

public buildings of Bedford, *besides those for religious* worship,

consist of the *Town Hall*, the *Infirmary*, an admirable institut
County Gaol, at the north-west entrance of the town, and *House*
rection; the *County Lunatic Asylum*, on the road to Ampthill, &c

BRIDGE, ON THE SITE OF BUNYAN'S PRISON, BEDFORD.

variety and magnitude of the charitable endowments of Bedf
remarkable; the most important of these is the *Free Grammar*
founded by Sir W. Harpur, in 1561. Bedford is not deficient in the
ments, &c. of a country town—races, assemblies, and literary insti
The government of the town is vested in a mayor and other m
officers. The neighbourhood of Bedford is richly agricultural,
greatly profited of late, together with the town, by the rapid ex
of railway lines, especially the Great Northern and the North-W
whose lines form junctions with, and branches to, the great trunk
the Midland Counties Railway. For a charming account of
and its environs, we would recommend the visitor to purchase M
Betney's Rambles in Bedfordshire.

The cloisters and refectory of a house of Grey Friars in Bedford are part of a farm-house, as is also the Hospital of St. Leonard's.

We cannot leave Bedford without recommending to our travelling friends an *excellent* Hotel, the SWAN, under the proprietorship of Mr. Wicks. THE BOOKSELLING ESTABLISHMENT of MR. THOMPSON should be also visited. We can also mention favourably the *first-class* establishment of MR. H. PAIN, IRONMONGER.

One of the greatest attractions in the neighbourhood of Bedford is WOBURN ABBEY, the seat of the ducal family of Bedford, a capacious quadrangular mansion, remarkable for its noble gallery of sculpture.

WOBURN ABBEY, SEAT OF THE DUKE OF BEDFORD.

One mile and a half from Bedford is *Elstow*, a considerable village, and the birthplace of John Bunyan. The Church is an ancient building in the Norman style of architecture, and contains several old monuments and a few brasses. In the south aisle of the chancel is the tomb of the last but three of the Abbesses of Elstow. Her effigies in brass, inlaid upon her tomb, are remarkable as being the only representation of an abbess in her official costume. At a short distance from the church are the ruins of Elstow monastery. The precise spot in the village on which

stood the house in which Bunyan was born, is unknown. We menti
this, as the credulous are often imposed upon by a contrary versi

ELSTOW CHURCH, NEAR BEDFORD.

In the nei
bourhood a
of Bedford
Ampthill, a s
of great histo
interest as
retreat of Qu
Catherine.
church is
handsome
fice. *Little E*
ford was
birthplace
Rowe, the p
Barton-in-
Clay possesses a handsome church of old English architecture, wit
monument by Chantrey. Near the village are Barton Hills. *Cran*
is a large and flourishing village, with one of the most noble mod
mansions in the county, belonging to J. C. Harter, Esq. *Wootton* i
interesting, widely-scattered village, four miles S.E. of Bedford, w
a handsome church, seated on an eminence.

Leaving Bedford, we pursue our railway journey, and passing suc
sively Oakley, Sharnbrook, and Irchester Stations, arrive, sixt
miles from Bedford, and thirty-one miles and a half from Hitchin, at

Wellingborough Station. The town is supposed to have deri
its name from the number of medicinal springs in its neighbourho
and one called Redwell was formerly of celebrity. Charles the First
his Queen once stayed here in tents a whole season to drink the wat
All Saints' Church is a spacious building, and has carved stalls on e
side of the chancel. Wellingborough carries on a considerable trad
corn, and the manufacture of boots, shoes, and lace. It is a station
the *Peterborough and Northampton Branch of the London and No*
Western Railway.

Four miles from Wellingborough is *Castle Ashby*, a station on
same line, and remarkable for the princely mansion of the Marqui

mpton. This building is approached from Yardley Chase by a avenue, nearly three miles in length, and forms a quadrangle. nt, exhibiting consider- ndeur, is chiefly taken a gallery of great length, surmounted by a balus- formed of inscriptions an capitals over the en- The drawing-room is ably grand, and is hung apestry. The Library some valuable old and manuscripts. The gs consist chiefly of portraits. The genius ability Brown was called ercise in laying out the d grounds. The *Church* the mansion. It is ally in the Perpendicu- e. The north aisle has decorated windows, and nall chapel is one of able beauty. In this are two monuments, one e, of Charles, the first s of Northampton, and his wife; the other is by Tenerani, of A fine brass in the chancel portrays the effigy of an eccle- On an altar-tomb is an effigy of a cross-legged knight. The oor is a fine specimen of late Norman.

CANONS ASHBY, THE SEAT OF THE MARQUIS OF NORTHAMPTON.

e Ashby is eight miles from Northampton.

rning, after this digression, to Wellingborough, we will pursue lway route, and passing FINEDON and ISHAM STATIONS, we

RING STATION, seven miles from Wellingborough. The town nsiderable antiquity. The Church contains some interesting nts. The trade of the place consists chiefly of wool-combing

and shoemaking. Two miles from the town is *Boughton House*, a se of the Duke of Buccleugh.

CHURCH AT CASTLE ASHBY, NORTHAMPTONSHIRE.

Leaving Kettering, we pass RUSHTON and DESBOROUGH STATIO reaching, about eleven miles distant,

MARKET HARBOROUGH STATION. The town is supposed to be Roman origin, and there are traces of a Roman camp in the vicin Charles the First fixed his head quarters here previous to the Battle Naseby. A trade in carpets is carried on here. Market Harboro is a station on the London and North-Western Railway.

Quitting Market Harborough, we pass KIBWORTH and G STATIONS, and arrive twelve miles distant at WIGSTON STATION, wh the Midland Railway branches on the left to Rugby, with runn powers over the London and North-Western Railway to Euston Stat Four miles from Wigston, we arrive at

LEICESTER STATION. Leicester is pleasantly situated, almost in centre of the county, in a gentle hollow, on the east bank of sluggish Soar, which is here crossed by four bridges. The princ streets, which intersect each other at right angles, are spacious well paved; but a large proportion of the town is built in a stragg manner. The old buildings have been mostly replaced of late years

modern brick houses. Leicester is a place of great antiquity. During the Saxon Heptarchy it formed part of the kingdom of Mercia. During the Civil War the burgesses warmly espoused the cause of the Parliament, and sustained a severe siege from the Royalist army. Owing to our limited space we can only notice briefly the principal attractions in Leicester and the neighbourhood, but for further details we can recommend the reader to purchase the local Guides of Messrs. J. and T. Spencer, which are most interesting: also a "Handbook of Leicester," by Mr. James Thompson. The visitor who contemplates a short stay at Leicester should also purchase Mr. F. T. Mott's "Guide to Country Lodgings," a pains-taking and useful little work. Those who take an interest in Leicester worthies should procure from the Messrs. Spencer an excellent Lecture on the late Lord Macaulay, delivered at Leicester, by Mr. J. F. Hollings, the respected late Mayor of that town.

ST. MARGARET'S CHURCH, LEICESTER.

Commencing with the churches of Leicester, we may remark that

St. Margaret's is remarkable for its handsome, lofty tower, and for large and ornamental porch on the south side. There are three rich stained memorial windows in this church, and several fine monume In the churchyard a tomb, ornamented with military trophies, is memory of Lord Rollo, who died in 1765. *St. Mary's*, near the Cas on the south side of the Newarke, is a large pile, of various style architecture, with a tower, surmounted by a lofty and crocketed sp The north porch has a fine curved Norman arch. The interio remarkably fine, and contains a Piscina of Saxon origin. Some excell restorations have just been completed in this church. Among monuments is one to the Rev. Thomas Robinson, author of "Scripture Characters;" and one to J. J. Hardy, Esq., an antiquari of some note. *St. Martin's* is a venerable and spacious edifice, dati from the period of Henry II. North of the chancel is what is term "Heyrick's Chancel." *St. John's* is a new and beautiful Goth structure, from the designs of Mr. Scott. *St. Nicholas'* adjoins t

RUINS OF LEICESTER ABBEY.

"Jewry Wall," and is the oldest church in Leicester. In the to are some vestiges of early Saxon architecture. In the chancel some curious pillars in the early English style. This church

ed and beautified in 1830. *St. George's Church* is in Rutland- and is built in the Decorated style. There are numerous ting places of worship at Leicester. The *Cemetery* is situated on on the road between Leicester and Knighton, commanding a wide e of scenery.

ester Abbey, of which we have inserted an engraving, was once nsive building, founded in 1143. The most important event ted with the place is the death of Cardinal Wolsey, who died his journey from York to London in 1530, and was buried in y chapel. The picturesque ruins in the views are the remains ansion built by the Cavendish family, after the destruction of bey. These were destroyed by fire by the forces of King I., on their retreat from Naseby. The *Jewry Hall*, sometimes e "Holy Bones," is situated near St. Nicholas' Church, at the . This venerable memorial of Roman building consists of a brickwork, stones, &c., with four dilapidated arches. The e *Boar*, the principal inn or hostelry in Leicester in the 15th stood, until within the last few years, opposite the Borough At this place Richard the Third slept on the night preceding e of Bosworth Field. This fine old relic of Leicester has given modern buildings. On the site now occupied by a cast-iron t Applegate-street, stood about twenty years ago, the famous t *Bridge*, with the Chapel of Our Lady of the Bridge. In the te neighbourhood, in Jewry Wall-street, is a deeply interesting antiquity, the *Roman Pavement*, discovered in 1832. The e *Gateway*, sometimes called the "Magazine," from its being nal of the county, owes its erection to John of Gaunt, and was ed the grand entrance to the Castle. It has lately been ely restored. A short distance from this building is the *Turret* y, which separates the Newarke from the Castle Yard, once an ded structure, built in the reign of Edward III. Of the *Castle* ut little remains. There is, indeed, the Castle Mount, upon stood for ages the tower, and the Great Hall, now altered and s the Assize House for the county.

e to St. Martin's Church is *Wigston's Hospital*, a very richly ed charity. The building is well worthy a visit. Close at hand Town *Library*, which forms a *part of the Town Hall;* a great

portion of the latter building is of the Elizabethan era, and was partly erected in 1586. Adjoining the Hall is the *Mayor's Parlour*, built i

KIRBY CASTLE, NEAR LEICESTER.

1636; it is a curious apartment, and is quaintly ornamented. contains a large handsome window, divided into three compartme curiously embellished. Not far from St. John's Church, and situa in the New Walk, is the *Town Museum*, containing a large collectio curiosities, antiquities, and specimens of natural history. It is o every day except Friday and Sunday: admission gratis. Near Cemetery is the *County Lunatic Asylum*, on elevated ground. On summit of the hill is a cluster of cottages built for aged widows. extensive *Common*, now laid out in small gardens, extends from her the river Soar, in the valley below; where are the *Raw Dykes*, Ro remains, the purpose of which is a matter of speculation. In Market-place is the *Assembly Room*, now used, during the Assize the Judge's lodgings. This edifice was raised about the commence of the present century. The Lord Lieutenant of Leicestershire is Duke of Rutland. The present Mayor is E. S. Ellis, Esq.

ghbourhood of Leicester is remarkably interesting, both for scenery and the objects of antiquity that abound. *Bradgate* birthplace and residence of Lady Jane Grey. Situated autiful landscape scenery, may be seen here the ruins of e mansion built by the Marquis of Dorset. In the Chapel t are buried several of the family of the Greys. The park is n miles in circuit. This spot is within an easy distance of as is also *Ulverscroft Priory*, or *Abbey*, one of the purest best preserved religious ruins in the county. It stands in a surrounded by a high eminence, in the Forest of Charnwood. m Ulverscroft is *St. Bernard's Abbey*, erected in 1844 on the of the immense rock called Mount St. Bernard.

astle, about five miles and a half from Leicester, is said to the occasional residence of Jane Shore. The ruins are much by visitors.

the rugged hills of *Charnwood Forest* (which is treeless, and 15,000 acres) is *Bardon Hill*, the highest point of the Charn-, commanding one of the most extraordinary views in the including Lincoln Cathedral (45 m. N.E.); Dunstable Hills); Malvern Hills (80 m. S.W); Pen-y-val, in Monmouth- m. S.W.); Wrekin, in Shropshire, and the hills in North to 100 m. W.); and the Peak Hill, in Derbyshire (70 m. N.); its circuit about a fourth of England and Wales. The laces offer good points for excursions: the village of *Wood-* *Hanging Stones*, near Beaumanoir; *Holy Well Haw*, near ugh; the Green Drives in *Garendon Park;* the old *Reservoir;* *y Stone*, near the Monastery; the valley about *Charley Mill* *y Hall;* valley of the *Black Brook; Rice Rocks; Croft* ge of *Stoughton; Cossington Church;* villages of *Cotes* and near Loughborough; *Coleorton Hall* and gardens; *Calke* *Breedon Cloud Wood*, both near Ashby.

-la-Zouch, fifteen miles from Leicester, is pleasantly situated valley. It is famous for good ale, and has a considerable nalting. Near this place is a noted mineral water called s. The coal-fields near Ashby give employment to many of tants. The Castle, of which we annex an engraving, is, he finest ruin of any kind *to be found in* Leicestershire. It

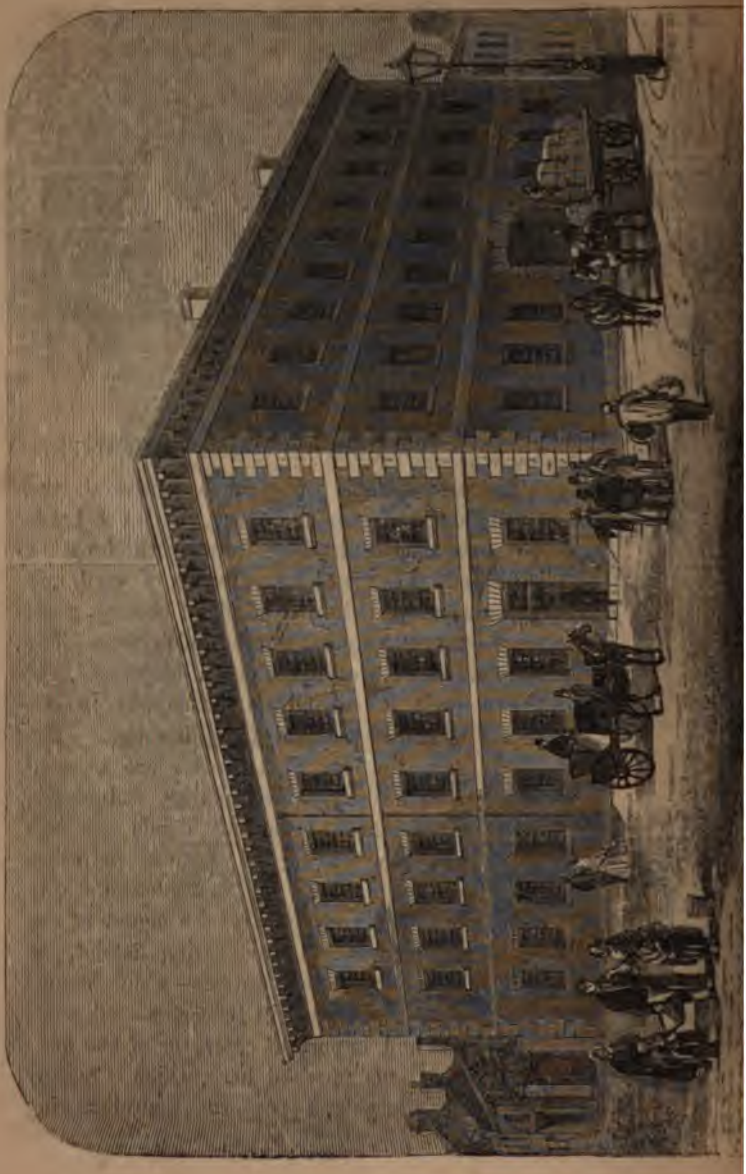
was built in the reign of Edward IV. King James was entertained here in 1617, and Charles the First dined at the Castle a few days before the storming of Leicester. The fortress was dismantled by the Parliamentarians. The ruins are picturesque and full of interest, and

RUINS OF ASHBY-DE-LA-ZOUCH CASTLE, NEAR LEICESTER.
(From a photograph by Poulton.)

show by their architecture that some parts of the building were added by a later owner than Lord William Hastings, the founder of the original building. In a little book published at Ashby, containing a "History and Description" of the town, may be found a full account of the Castle in its glory and its ruin. The scene of the grand tournament described in "Ivanhoe" is about a mile to the westward, near the village of Smisby. The most interesting woods in the neighbourhood of Leicester are *Buddon*, *Mucklin*, Long Cliff, Gracedieu, Bardon, Ben's Cliff, Swithland, and the woods between Ulverscroft and Newtown. Every one of these has a character of its own, a distinctive and peculiar charm. Buddon is famous for its rocks, its mosses, ferns, and fungi, and its monster colonies of great black ants. Mucklin has a beautiful green lane, so canopied with over-arching boughs that on summer evenings it is dark within while the glow of sunset still reddens the western sky. Long Cliff is a delightful place for a saunter. The *winding path* through Gracedieu is one of the loveliest walks in *England*.

COMMERCIAL ASPECT OF LEICESTER.

Leicestershire is partly an agricultural, and partly a manufacturing county. It is the head-quarters of the hosiery frame-work knitting business. The combing, spinning of wool, and manufacturing it into all kinds of hosiery, gives employment to a great number of persons. The occupation of weaving, though dispersed over the county, is carried on principally in the towns of Leicester and Loughborough. The staple manufactures of Leicester are worsted and cotton hosiery, glove-making, and elastic web manufacture; numerous hands are employed in the making of frames, or other machinery required by the weavers and manufacturers. The town is also the centre of the great agricultural and wool-raising district. A glance at our commercial notices—which include the most eminent firms in Leicester—will show the varied and important character of the business operations pursued here, which is rapidly becoming a large and *prosperous manufacturing*



THE PREMISES OF MESSRS. R. HARRIS AND SON'S, BRAUNSTONE GATE, ST. MARY'S.

Messrs. R. Harris and Sons, Manufacturers of Fancy Hosie Braces, Gloves, Cravats, Military Sashes, etc. etc.

It is our duty, as indicators of all that is worth seeing in Leices to inform our readers that one of the most interesting places to visited is the above establishment; where manufacturing operati are carried on with an expedition and completeness that will surpr the uninitiated beholder.

Messrs. Richard Harris & Sons are manufacturers of every descr tion of Hosiery, such as Shirts, Pants, Drawers, Stockings, Soc Gloves, Braces, Cravats, Sleeves, Polka-Jackets, Vests, and all knit wool articles.

This is undoubtedly one of the most extensive manufacturing est lishments for Hosiery in the Midland counties, giving employmen several thousand workpeople.

The offices and warehouses are in King-street and Marlboro street. The manufacturing and dyeing departments are in Braunst gate, St. Mary's.

The principals in this very leading establishment are J. D. Ha R. Harris, and G. Shirley Harris.

The Bow Bridge Elastic Web Manufactory of Messrs. Archibald Turner and Co.

The very extensive works to which we now introduce the re belong to a class which, for commercial enterprise, exhaustless m and the untiring energy of the contractors, give the British manu turer a superiority over those of other nations. Throughout the w of the vast premises now under notice, the visitor will find the gre method and arrangement, added to an amount of labour that scarcely be conceived. In this busy hive of industry, in which a three hundred workpeople are constantly employed, it is truly i esting to observe with what regularity all the processes of the m facture are carried on.

The introduction of vulcanised india-rubber into woven braids other fabrics, is due to the senior member of the firm, Mr. Arch Turner, who first applied its use to gloves, about fourteen years since that time he has also applied it to a great variety of articl

GENERAL VIEW OF THE BOW BRIDGE ELASTIC WEB MANUFACTORY, THE PROPERTY OF MESSRS. ARCHIBALD TURNER AND CO.

dress, such as cotton, silk, and worsted cords, cotton, silk, and worsted braids, varying in widths from two to eighteen strands; he has also adapted it to a great number of woven fabrics, from a quarter of an inch to eighteen inches wide, for various purposes, such as braces, belts, garters, bands for crinolines or jasses, gores for corsets, bands for pocket-books and porte-monnaies, hair-nets, collars, sleeves, bracelets, gussets of all descriptions for boots and shoes; also for a great variety of surgical purposes, &c. &c. &c.

Messrs. Archibald Turner and Co. are the sole proprietors of many very valuable patents, and these constitute, in themselves, a source of prosperity in connexion with their business. We may remark, *en passant*, that Messrs. Archibald Turner and Co. have warehouses in London (63, Aldermanbury); Paris (4, Rue Pagevin); Manchester (50, Fountain-street); Birmingham (49, Ann-street); Glasgow (72 Wilson-street); Dublin (13, St. Andrew-street). The enumeration of these branch establishments in the most important commercial cities and towns, will give the reader an idea of the immense business that is carried on at Bow Bridge Works, to necessitate such agencies. In fact, these premises are the most extensive and complete of their kind in the kingdom.

We will accompany the reader through this busy workshop. The engine is of great power, and of the most approved construction. In the engine-house everything is in perfect neatness and order. The same prevails in the fitting and carpenters' shops in the manufactory, the machinery works both perfectly and admirably; the care and cleanliness throughout the entire works give evidence that the eye of the master is everywhere, and to his vigilance is due this satisfactory condition of work and workpeople. It is also pleasing to notice the cheerfulness and air of comfort that is seen amongst the operatives themselves, a sure proof of sound and liberal management. It is certain that few workpeople would have to complain if the principals of establishments were personally, from time to time, to see after the well-being, and to encourage them to praiseworthy habits of industry and morality, by judicious and benevolent conduct.

The works are situated at the west side of the ancient town of Leicester, on the banks of the Soar. The old Bow Bridge adjoining the premises spans a part of the above river, and to this bridge some

THE BOW BRIDGE ELASTIC WEB MANUFACTORY, THE PROPERTY OF MESSRS. ARCHIBALD TURNER AND CO.

historical interest is attached, from a tradition that King Richard in passing over Bow Bridge on his way to Bosworth Field, thirteen miles distant, struck his spur against a stone which stood by, and a wise woman prophesied, that where his spur had struck head should be broken; that on the 22nd August, 1485, his dead was brought back to Leicester naked, and hanging across a horse in the tumultuous passage over the same bridge, his head was d against the same stone, thus fulfilling the prophecy; that after the body of the king had been exposed to the gaze of the populace, i interred in the churchyard of the Grey Friars, by Blanch Sanglie of his pursuivants-at-arms, where it remained until the suppressi that monastery; being then taken out of the stone coffin in which i deposited, and carried out of the city, "it was contemptuously bes under the end of Bow Bridge." Such is Holmshed's account, w forty years after the event. An inscription to this effect is place the stables belonging to the Bow Bridge Works, by the Archæol Society of Leicester, which records that "Near this spot lie the re of Richard III., the last of the Plantagenets, 1485." This is suff to give an interest to the locality, and to render the building w now describing worthy the regard of all visitors.

On entering the grounds attached to the works, the attention visitor is attracted to the handsome modern residence of Mr. Arch Turner, as also to the beautiful conservatories, the spacious and mental gardens, which have been laid out with great taste and presenting to the eye a scene seldom beheld in such close prox to a manufactory where so many workpeople are employed.

EXTRACT FROM LEICESTER JOURNAL, NOV. 14, 1856.

Leicester Traditions—King Richard's Grave.—The local traditi a town like Leicester (one of the most ancient in the kingdom) are preserving; and amongst them few are, as it appears to me, authenticated or more interesting than that relating to the last re place of the last of the Plantagenets. The story is, that King Ri passing over Bow Bridge on his way to Bosworth Field, struck hi against a stone which stood hard by, and a wise woman prophesie where his spur had struck his head should be broken; that o *evening* of the 22nd August, 1485, his dead body was brought ba

ERIOR OF THE BOW BRIDGE ELASTIC WEB MANUFACTORY, THE PROPERTY OF MESSRS. ARCH

Leicester naked, and hanging across a horse; that in the tumult passage over the same bridge, his head was dashed against the stone, thus fulfilling the prophecy; that after the dead body of king had been exposed to the gaze of the populace, it was interre the church of the Grey Friars, and lay there until the dissolution o religious houses (about the year 1535); that it was then exhu dragged contemptuously through the streets, thrown over the Bow Bridge, and afterwards hastily buried in its immediate vic which happened to be the grounds of the Augustine Friars.

I have often heard this story told since my residence in Lei and have often repeated it to strangers; and when in the pulling of the old walls thereabouts, and the erection of new buildings, seemed some probability of the place of the supposed grave of Richard being lost to sight and memory, I made it my busin solicit the present owner of the estate that he would consent to stone, or other memorial of the event, being placed there; to th at once kindly and courteously consented, and nothing remained, supposed, but to consult my archæological friends as to the form of monument, and the manner of raising the necessary funds. On mencing the work, however, I was staggered with the information not only was that, as the place of interment, questioned, but it asserted that the coffin of King Richard had been found, and som his bones—his skull, at all events—had been found with it.

Of course I laughed at my informant—it was such a palpable pie humbug; I thought he had made up the story, to escape being for his subscription! I told him so.

"Not at all," was his reply; "it is no story of mine; it is in it is published—the author puts his name to it; and he is the archæologist in the town or county."

"Name, name," I called out, "the book and the man; where one, and who is the other?"

"The book is the 'Midland Counties Historical Collector.' man is James Thompson, author of the 'History of Leicester.'"

Here was a predicament! Why, I had not long ago excited the of all my friends by venturing to assail this champion; they h urged upon me the dangers I had encountered, and the escape had, that, in truth, I half made a vow that my next archæological t

THE PRIVATE RESIDENCE OF ARCHIBALD TURNER, ESQ., OF THE BOW BRIDGE ELASTIC WEB WORKS.

match should be with a feebler knight, and that I would "touch Ra
de Vipont's shield, the hospitaller who had the least sure seat."
one, in fact, but that of Brian de Bois Gilbert.

But what on earth am I to do? I don't like to give up my sto
King Richard's grave, for I am fond of acting as showman, now
then, and spinning a yarn; and yet how can I go to Bow Bridge,
with a grave face, point out the last resting-place of King Ric
when I know that all the while his skull and his bones are lyi
Mr. Paul Dudley's wine-cellar? How is it likely that I shall
copper towards his monument, when his coffin is still above groun
to be had, bones and all, for a five-pound note?

How can I ask Mr. Turner to deface his new buildings with a
slab of stone, when he can buy a printed contradiction of the
story for twopence, thrust it under my nose, and say with indigna
"Sir, look at that?"

I declare solemnly that until yesterday I had never seen Mr. Tho
son's "Historical Sketch of Richard III.;" that not until after I
obtained Mr. Turner's consent to put up a monument on his grou
did I know that King Richard's bones are now (as Mr. Jas
Thompson says) in Halford-street, and—on sale.

I also declare that, when my friend Eliot Roscoe talked of
enlarged space of the journal affording room for many an archæolog
tilting match, I no more expected to have another encounter
Mr. Thompson (that is, of course, supposing his paper on Leice
Castle remains unpublished) than with the man in the moon.

But what is to be done? I don't like to give up the old story
don't like to give up the hope of the monument (we can't afford to
up our old Leicester traditions), and yet I must either do this, or
for it. Well, *che sara sara!* I hope that I have satisfied all lover
peace that the battle is forced upon me, and that in once
challenging the correctness of Mr. Thompson's theories, or supposit
or conjectures, or whatever he calls them, I am actuated by no pers
or vindictive feeling. I must repeat, that he who publishes a
challenges public criticism; and I have been made to experience
truth of this in the columns of the *Chronicle;* in fact, Mr. Thom
himself assured an angry correspondent, that my last letter was
actuated by any feeling of hostility, but merely to "give a lift t

his publications." So is this. It is written with two objects; "give a lift" to the sale of the "Midland Counties Historical tor," No. 17, and then to examine how far Mr. Thompson's , as set forth therein, will bear criticism.

this purpose, then, Mr. Editor, I bespeak sufficient space in your week's journal—that is all; "a clear stage, and no favour." The is interesting to all Leicester men, and to Mr. Thompson ly. If he is right—that is, if he can satisfy any reasonable man g Richard's skull is where he says it is—Mr. Dudley will give nd of money; in legal phraseology he says, "Clear up the title, pay any fee." And if, on the contrary, the editor of the feels that his conjecture is, after all, not so plausible as the old , I will leave it to his candour to say so at once like a man, generosity to make a handsome donation to King Richard's at Bow Bridge; and so, till next week, I bid him and you

Yours obediently,

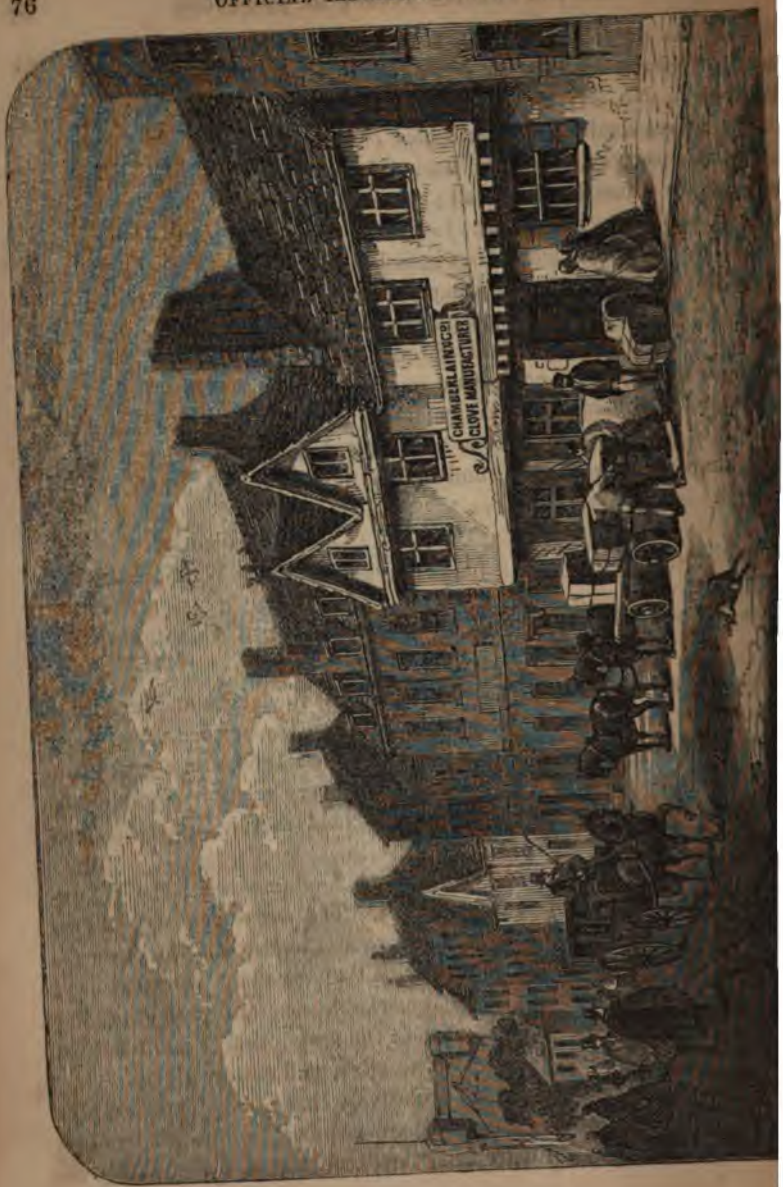
th, 1856. (Signed) W. N. Reeve.

Glove Manufactory of Messrs. Joseph Chamberlain and Co.

ensive business,—known throughout the length and breadth of m,—is the sole property of Joseph Underwood, Esq., twice Leicester, viz., during 1856, 1857, and 1858, and a gentleman ledged commercial integrity. In every relation of public and e, Mr. Underwood is deservedly held in the highest respect n.

TORY is situated in Crown-street, Asylum-street; the Ware- e at No. 61, Southgate-street. The former consists of two containing sixty large machines and looms, and the other on above, having fifty machines, all of excellent workmanship, apted to facilitate, with remarkable ease and perfection, the ed on. In the latter apartment the description of manufacture to the production of cloth, woollen, and cotton gloves.

ciple of this business is exclusively that of wholesale supply, immense quantity of goods are required, which are readily by merchant *shippers from the excellence of their* quality.


CHAMBERLAIN & Co
GLOVE MANUFACTURERS

dred and fifty hands are employed on these premises, not manufacture of gloves, but in the making of Cashmere shirts, rticles there is a large and increasing sale.

derwood is also proprietor of similar works in BONNER'S-LANE, celebrated "Pinto" is made. On these premises—which are the ruins of the old castle—several large rooms are stocked inery in full activity.

t going into any lengthened history of that important article the *Glove*, we may remark that there are some peculiar circum- tending a glove, independent of its relation to manufacturing It has, in various countries and at different periods, been the friendship, of love, and of safety; the symbol of hatred and of degradation and honour; the token of loyalty; the tenure estates have been, and are held; and a customary offering on both of sorrow and of joy.

st law relating to the subject of gloves is dated in the year Charlemagne. So far as England is concerned, the first com- ction of the glove trade is dated about the year 1462, though d been worn in this country for centuries before. By an this date, gloves were prohibited from being imported into by reason of the protection which it was deemed proper to his branch of home manufacture. In London, the glovers were ted by Charles I., in 1638, and the trade was then important tropolis. At this period deer and sheep-skin gloves were the cipally made in London. It is calculated that nearly 50,000 are employed at present, in the manufacture of gloves in and the value of the yearly produce is estimated at about a erling!

-work manufacture is a peculiar kind of interlacing. Instead a series of cross threads woven in a loom, it is a series of loops connected as to possess both strength and elasticity in a ble degree. It is a continuous thread, which is thus linked self in a way which bears a good deal of resemblance to many ladies' netting and crochet work. There are three kinds of : the *winders*, who put the thread into or on the machine; -work *knitters*, who work the thread up into a knitted fabric; who make the *gloves out of the pieces thus* produced. The

visitor, as he walks through the premises of Messrs. Chamberlain Co., and sees the various operations carried on with an expedition defies description, will be astonished at the immense quantities of g that are made in an apparently quiet and unostentatious ma Millions of gloves are sent forth from hence, and become distri over all parts of the empire, carrying the name of the manufacture and wide, and adding to the comfort and appearance of thousa whom such articles of apparel are indispensable. Not the least re able is the neatness of the work itself, the strength which such rently fragile materials of which it is made can give to it; all the marvels to the uninitiated, and, perhaps, after all, the greatest is, that a glove, requiring such expensive machinery, and so muc can be sold for a mere trifle compared with former prices. In making, as in everything else, improvements have been made, m turing operations have been simplified, and human ingenuity has means by which much can be performed with the least possible of labour. We cordially invite our travelling friends to visit the factory of Messrs. Chamberlain and Co., where every attention shown to them, and a ready answer given to all inquiries.

Messrs. Fielding and Johnson, Worsted Spinners.

The premises of this enterprising firm are situated in West and Bond-streets, in the parish of All Saints. The buildings have bee cently much enlarged, the business having extended to a degree rendered additional spinning-rooms and increased steam-power neces The new chimney (which is 136 feet high, and has a diameter a base of 12 feet) is a conspicuous object from all parts of the surrou country, and will indicate to the visitor the position of the manufac The steam-engines which keep the busy spindles in motion are made by Messrs. Petrie and Co., Rochdale. They are of 80-horse p and are beautiful specimens of workmanship, with all the lates provements.

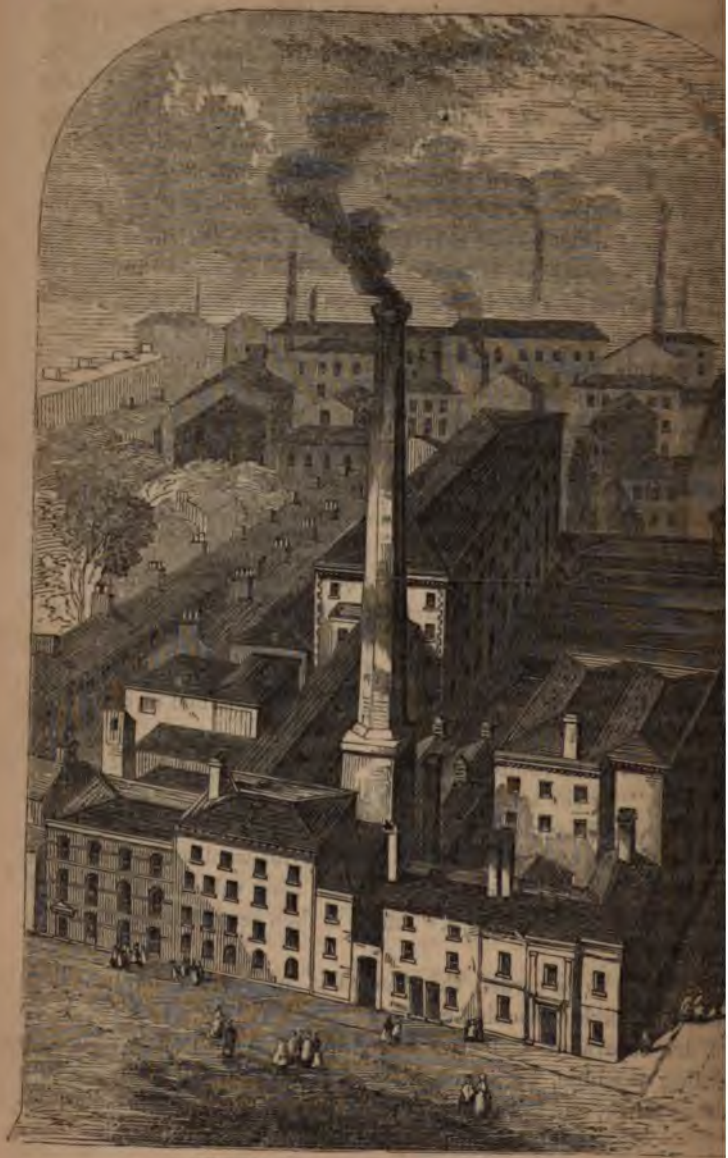
As the visitor will, no doubt, be desirous to see how the fa operations are carried on, we will give a brief outline of them. may observe, in commencing, that the term "worsted stuff" is ap *to those manufactures* into the composition of which wool enter

ergone the process of either *carding* or *combing*, and includes those in which wool thus combed is combined with cotton and with silk. me "worsted" is derived from a village in Norfolk, where these were first produced. These fabrics are carefully to be distin- d from *woollen cloths*, the chief characteristic of which is, that ndergo the well-known process of "felting" or "fulling." In e up a number of fleeces, a distinction is easily observable the wool of short and that of long staple. The short wool, if ed by a microscope, is noticeable for the immense number of utiful serrations or imbrications on its surface, which enable ividual fibres to be locked into one another by the felting and this wool is accordingly most used for the production of cloths. The longer wool does not possess these serrations ame extent, and is better suited for combing, the object of to unravel all the fibres, and lay them smooth and even. ecessary to mention this distinction between woollen and manufactures, as they have long been confounded in popular ogy.

manufactory now under our notice the processes are as fol- After the wool has been carefully sorted, it is taken to the "wool se," where, by the aid of powerful machinery, all the adherent d dirt are scoured out of it. It is next passed into the stove ally dried, and is then ready to be either combed or carded, as required.

wool is to be combed, it is first passed through a set of "screw rers," by the action of which the staples of wool are divided, bres straightened. It is next passed through a "patent comb- ne," by which all the short and inferior wool under the name s" is separated from the long and most valuable wool, which by the name of "tops," and it is then ready for the spinning nt.

wool is to be carded, the process is much more simple. It is d through a machine called a "plucker," by which the locks are separated, and after being sprinkled with oil, is placed on ng machine, by which it is straightened and reduced to a e sliver, and is then ready for the processes of the spinning-



THE PREMISES OF MESSRS. FIELDING AND JOHNSON.

" the object of which is to open out any fibres which may have
d the action of the combs, and to bring the wool into the form of
or narrow belt. This roll is then lapped round a large bobbin or
er; then passed a second time through a breaking frame; and then
ted to the action of a machine analogous, in principle, to the draw-
me of the cotton manufacture; the object being to extend the
, diminish the thickness, and equalize the number of fibres of the
sliver. Hitherto the woolly fibres are merely slightly coherent,
t having any twist; but they are now passed through a *roving*
e, preparatory to the process of spinning. The roving and
g are conducted much in the manner that cotton is done.
spun the worsted is wound on a reel, and is then made up into
k."

now passed to the "yarn wash-house," and thoroughly cleansed
e oil or any impurities it may have acquired during the process
facture. It is next taken to the dye-house to receive any
colour, or is at once placed in a large, airy, heated room, in
it is speedily dried. The yarn is then taken to the "finishing-
" where it is "made up" into neat compact bundles ready for

articles manufactured include both combed and carded wools,
knitted, and hosiery yarns; and from this immense establishment

and there is every evidence of its permanent prosperity. One of the spinning-mills in Leicester was erected by the principals of this he and their perseverance has been well rewarded. Every possible a tion is paid to the comfort and well-being of the workpeople emp on these premises, who number several hundreds. The factory w with proper care and attention to ventilation, cleanliness, &c., is b means unhealthy, and we must render justice to Messrs. Fielding Johnson that they have not omitted anything to conduce to desirable end. The premises have been enlarged, and rendered, in e respect, commodious for manufacturing purposes.

Richard Angrave and Brothers, Belvoir-street,

Manufacturers of Woollen Hosiery, Shirts, Pantaloons, a Under-clothing of all Descriptions.

This firm has been in existence more than a quarter of a century, manufacture extensively the above articles of comfort and utility, b for the home and foreign markets. Though the proprietors limit th selves chiefly to this one department, an inspection of their wareh and stock will show that the great variety which it comprises affords am scope for the efforts of an enterprising house. Their stock consist lamb's-wool and cashmere hose and half-hose, from the coarsest to finest qualities, and suitable for both sexes; shirts, pantaloons, chol belts, ladies' vests, drawers, chemises, union dresses, petticoats, &c.

Within the last twenty years this branch of business has exten itself more, perhaps, than any other of the staple manufactures of town of Leicester, and exhibits more improvement in style,—arisin part from the public appreciating the comfort and luxury of woo under-clothing, and partly also from the strong recommendation of t use by the faculty as a means of preserving health.

The rise, progress, and present state of the woollen hosiery busi would almost make a chapter of romance, so many inventions been devised for expediting the manufacture, and so numerous novel have been the articles that have been brought forward adopted, first as luxuries, and afterwards as actual "wants" of Within the last half century, and especially of later years, the cha

manufacture have been numerous. The processes at the eighteenth century were characterised by the most primi-y, and a degree of "slowness" which in these railway scarcely realize. The work was entirely domestic, and its ches were widely scattered over the country. First, the had to travel on horseback to purchase his raw material rmers, or at the great fairs held in those old towns that been the exclusive markets, or, as they were called, wool. The wool safely received was handed over to the gorously applied their gauge of required length of staple. l was then passed into the hands of the combers; and brought back by them in the combed state (technically), was again carefully packed, and strapped on the back horse, to be taken into the country to be spun. At he manufacturer had his agents who received the wool, among the peasantry, and received it back as yarn. employed was still the old one-thread wheel, and in er, on many a village green or hill-side, might be seen s plying their busy trade, and furnishing to the poet the tentment spinning at the cottage door." Returning in yarn, the manufacturer had now to seek out his weavers, y delivered to him his goods, ready for sale to the mer-ery to the dyer.

to contrast the cumbrous and laborious proceedings of man of former days, and to see the wonderful rapidity ery department of the wool trade is now carried on; the ticles that are made for our comfort and convenience, and manner in which they are completed. In the extensive f Messrs. Richard Angrave and Brothers may be seen and the care with which garments of every description ; the durability of the articles, and the ingenuity with aid of machinery, they are prepared. The vast quantities h are in a constant stage of transition, to meet the orders m all parts of the country, are evidence, also, how indis-have become to our comfort, and from being luxuries, the necessaries of daily life.

o have been *the aim of the firm to make the best* articles

which machinery can produce in the department of manufacture which they have chosen. In garments consumed by the million, cheapness, durability, and sightly appearance—whilst in the superior classes of goods, richness and excellence of material, with the utmost attention to style and finish—have placed their house in the front rank of first-class manufacturers.

Messrs. Angrave and Brothers were competitors in the great Industrial Exhibition of 1851, and carried off the prize medal for "woollen drawers and shirts of excellent quality;" and the steady growth of their trade proves that the award of the Exhibition judges is confirmed by the buyers for the general trade, both home and foreign.

The Engine Works of Messrs. Gimson and Co., Welford-road

General Machinists, Engineers, and Iron-Founders.

The particular business of this firm is the production of machines used for the purpose of producing India-rubber Threads; also machines for the Elastic Thread Trade of the Messrs. Turner, of Leicester.

The works, which are very extensive, and well adapted to manufacturing purposes, are situated in the parish of St. Mary's, and are entered from the Welford-road. The first subject that meets the eye of the spectator is a large Smithy, with three fires, near which the swarthy Cyclops are wielding their ponderous hammers, and making the air ring with their heavy blows. Adjoining the Smithy is the Machine Shop. In another department we see upwards of fifty machines in motion, performing their allotted duties of slotting, screwing, punching, with lathes and drills. The steam-power employed is equal to forty horses, and with this assistance all the operations of these works are carried on with great facility and despatch. The number of hands employed is one hundred. The room in which the machines are placed is well stocked, and over is a large shop, which at the time of our visit, was filled with looms for the India-rubber trade. This is an evidence of the progress made in some branches of commerce; for, a century ago, india-rubber was only known as a curiosity; now it is regarded almost as a necessary of life, and, of late, *no a year has gone* by without some new and valuable application of

THE ENGINE WORKS OF MESSRS. GIMSON AND CO.

this remarkable substance. To return to our description of Me Gimson and Co.'s premises, we now ascend to the PATTERN-Ro STORE-ROOMS, and other Machine-Rooms, all giving evidence o large amount of business transacted, and showing great method in arrangements.

The firm also manufacture Stationary Steam-Engines, Corn-M all kinds of Shaftings, Gearings, &c.; Steam-Presses, Hot-W Apparatus, and are, in fact, General Machinists, Engineers, and founders; the amount of work, therefore, done on these premi very great.

In the Welford-road, opposite the Foundry, Messrs. Gimso Co. have a larger Boiler-yard, and another Foundry, which is the L of the kind in Leicester. The manufacture of boilers is an imp branch of the business. The boilers in general use are formed exclu of iron and copper, or of both, although brick and stone have used for this purpose. Copper is considered the best materia power of conducting heat being nearly double that of iron; a co boiler, of only one-half the superficial contents of an iron one, generate a similar quantity of steam. Iron, however, is said to po the greatest cohesive strength. One great desideratum in the st engine appears to be in the formation of a good boiler,—one capab generating the greatest quantity of steam with the least amoun fuel, yet secure from explosion. They should be constructed wi view to provide against rupture, or rather, that in the event of engine receiving a shock sufficent to rupture the boiler, it sh occur in that part best calculated to prevent loss and accident, p cularly in those for locomotive purposes: small boilers are, therefore, sidered the best. If a large boiler with large tubes of separation bu the risk of damage and loss of life is much greater than in the case small-chambered boiler, as these tubes, being small, act as so safety-valves, and occasion nothing more than a stoppage. The re of the boilers of locomotives so seldom bursting, is mainly attribu to the slightness of the tubes, which are constantly the parts soo affected in the event of any unusual strains, when they merely le water down upon the grate, and put the fire out. Their wear is sequently very great; but if these were made sufficiently stron *resist, the* sides of the boiler might be reasonably expected to b

would be attended with greater consequences. Boilers may be bed as being generally of four kinds, viz. 1st, Globular; 2nd, drical, with either flat or concave ends, as the Cornish boiler; Waggon-shaped, having semicircular top, and flat sides and ends, invention of Watt, and which are sometimes termed *oblong*, or ngular boilers; and 4th, the Tubular, which was originally applied motives, on account of its small size and great evaporating r. The first and second description of boilers are mostly employed gh-pressure engines, their form enabling them to withstand steam at elastic force. The waggon-shaped are generally employed for ry purposes, and compensate, by their greater bulk, for the large ating surface possessed by the others: they are also well adapted l of a slow rate of combustion, comprising every kind of coal. boilers of stationary engines are generally made of plate-iron, ighths of an inch thick, with rivets from three-eighths to three- of an inch in diameter. All boilers should be proved when three or four times the pressure they are intended to bear, and nally when in use, by the hand feed-pump, until the safety- lifted. The latter should be loaded with at least twice the g pressure, to detect any weakness from the effect of corrosion.

ming our notice of the premises of Messrs. Gimson and Co., ld direct the visitor's attention to the NEW SHOW-ROOMS, in re stored the various and useful productions of the firm. This e some idea of the business carried on at their works, and the ion to which the manufactures are raised.

THE WINE ESTABLISHMENT OF MESSRS. MOTT AND CO.

ated in Cheapside, Market-place. This highly respectable firm es a large business in Liverpool, where are also their chief d Stores. The principal of this Midland Establishment is Mr. Mott, to whom not only the inhabitants of Leicester, but the rs to this interesting old town, are under much obligation for being a clever and useful guide to Charnwood Forest and the neigh- ood, a work to which we have already alluded in our pages. To a worthy endeavour to attract the visitor to a residence, brief or ged, in this fine county, Mr. Mott has provided another means ding to his comfort and *health, by keeping a stock* of choice and

invigorating wines, the best that the vintage can give, imported fro
the most accredited sources, and adapted to every palate.

There is no business that we could name in which integrity
character is more requisite than the wine merchant; for we place ou
health and much of our social enjoyment at his mercy. Sometim
the unprincipled wine-seller, indifferent to his reputation, and trustin
to the blind favours of chance, finds victims to his dishonesty, an
palms a wretched, unwholesome mixture upon his unsuspecting cu
tomer, with an effrontery which laws are unable to punish. *Che*
wine-dealers may be constantly met with to whom adulteration is t
rule, not the exception, and it is precisely against such persons that
would caution our readers. The respectability of Messrs. Mott and C
places them out of the reach of such suspicions.

A long experience in the wine business has enabled them to co
mand the best foreign markets for their wines, and to prefer a small
amount of profit and insuring the perfect genuineness of their good
to large gains and tampered wines. It is only by purchasing fro
first-class dealers like Messrs. Mott and Co., and paying a fair an
reasonable price for their wines, that security is obtained. To pro
that we do not exaggerate the evil, let us take the article of port win
It is well known that a large adulteration is carried on at Oporto b
mixing port with inferior wines, which are imported for the expre
purpose. By this method the supply of port wine is always kept up t
an uniform quantity, however bad the year's vintage may have bee
Nothing in commerce is so adulterated as port wine. Every trick h
been employed, every ingenuity exercised, to deceive the purchase
As the knowledge of the proper flavour of wines forms, in itself, an a
which few excel in, and all are ambitious of, the unprincipled dealer h
a wide and safe field for his nefarious practices. For the sake of increa
ing the brilliancy of the colour of young and thin wines, alum is adde
in small quantities; to give port a rich deep tint, copious doses of elde
berries are given; to make cloudy wine clear and transparent, gypsu
is a favourite remedy; and various sophistications are made wi
extracts of sweet-briar, orris-root, clary, cherry-laurel water, and elde
berry flowers. Spoiled cider is sometimes manufactured into an imit
tion of port; and, let us add, these adulterations form a distinct an
lucrative occupation. At Cette, in France, those following this tra

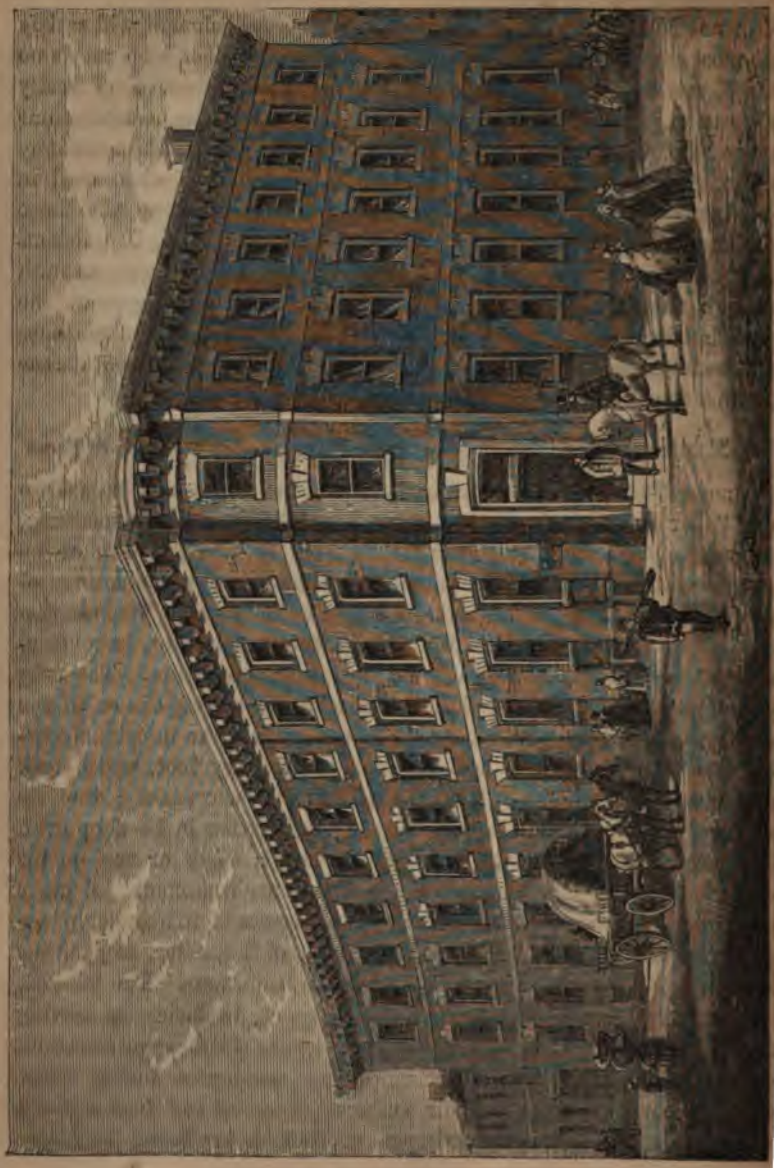
THE SEVERAL ESTABLISHMENTS OF MESSRS. MOTT AND CO.

do not hesitate to fasten boards, with "wine manufactured here," over their doors. Again, with regard to Sherry, this wine commands too high a price for it to escape the adulterating tricks of trade. The profit of substituting a cheap imitation for the genuine Spanish produce is so tempting, that every species of fraud is imagined and practised. Either wine of an inferior quality and value is fraudulently mixed with that which is of really good growth, and, under cover of bills of lading and sale, passed off for what it is not, or else a fictitious compound is unblushingly sold. At Cette great quantities of sherries are made up and shipped for the English market, the composition of which is nothing more than a cheap white wine, strengthened with brandy, coloured with treacle, and flavoured with almonds. The deceits practised in Madeira are very similar to those to which sherry is subjected. Sometimes the so-called "finest old West India" has been wholly manufactured in England, and had not a drop of Madeira in its composition. An immense quantity of home manufactured champagne is sold in England. The most harmless deceit is that of importing a cheap light French wine, sweetening and colouring it, and then passing it off as the best champagne. It must be remembered that the effervescing is due to the carbonic acid gas, and not to the quality of the wine. It is a common practice to buy up the bottles in which the real wine has been imported, and to refill them with gooseberry wine. Even clarets have their deceptions; a great deal of the wine sold as such in England is nothing more than a common, cheap, sharp wine, sold in the drinking-shops of France, and passed off as "superior wine" in this country. New claret is made to imitate old, by pouring out a small quantity of the wine, and then standing the re-corked bottles into water, which is gradually made to boil. The poured-out wine is then replaced; the bottles are dressed up to have an aged look, and are finally designated ten years' old claret. Occasionally a common French wine is mixed up with rough cider, and coloured up to resemble claret, with cochineal, logwood, and other materials, and, in the end, disposed of at a good price. We are fairly out of breath with this enumeration of wine abominations, and we turn from the subject with pleasure, to recommend our readers to avoid the shoals of unprincipled dealers, and to confine their orders to merchants of well-known integrity. THE BEST AND PUREST WINES MAY BE HAD FROM

Messrs. Mott and Co., and a visit to their establishment will satisfy the most cautious and fastidious of purchasers. "Good wine needs no bush," nor need we expatiate on the sanative properties of really wholesome juice of the grape; but we cannot better conclude our notice of this excellent establishment than by quoting the testimony of Dr. Pereira. "Wine," says this eminent authority, "when used in moderate quantities, proves a very grateful, and, to those who have been accustomed to it, an almost indispensable stimulant. It quickens the action of the heart and blood-vessels, diffusing an agreeable warmth through the system, promotes the different secretions, augments the muscular force and activity, excites the mental powers, and banishes unpleasant ideas and reflections." We may add that the genial doctor does not forget to urge *the goodness of the liquor*.

The Midland Shoe Manufactory of Messrs. J. Preston & Sons.

Among the various manufactures of Leicester which may be said to have "marched with the times," and exhibited a progressive tendency, we may mention the trade of Shoemaking. This may be said to be partly owing to the introduction into this branch of manufactures of the *Riveting* system, which had its origin at Leicester. We use the word *manufacture* because, as Mr. Charles Knight explains, its application to the boot and shoe trade belongs to recent times. The only notion, formerly, of a shoemaker, whether in the metropolis or in the country, was that his entire handicraft was confined to individual customers of either sex; that he undertook to fit every foot, which task he endeavoured to accomplish by careful admeasurement; that he employed a few men and women, who worked either in his shop or in their homes; that he would occasionally have a *misfit* or two on his hands, but that he kept no stock ready for chance customers. A great change for the better has come over the interests of this trade, for we see, as in the case of the Messrs. Preston, of Leicester, large firms raising it into importance, and extending its usefulness. The Messrs. Preston were among the first, in this respect, in Leicester, having profited by the impetus given to the trade by the Riveting process, and having had the advantage of securing a good connexion during many years of close application to their business. So great had been the call for their shoes that, in the early part of 1860, it was found necessary



New Warehouse and Manufactory, which buildings are
d by our artist in the accompanying engraving.
remises are situated in Southgate-street, in the parish of St.
ey have a frontage of about 130 feet, and are most commo-
apted to the various objects for which they were erected.
g in the basement, and the first and second stories, are inter-
d to facilitate the arrangement of work into departments,
pper story forms one immense store-room. As an architec-
e, also, this building may be considered an improvement and
t to this portion of the town.

Preston give employment to a large number of workmen in
anufactory, while a still larger proportion of operatives are
th work at their own homes.

ty of goods manufactured on the premises of Messrs. Preston
to be remarked as the enormous quantity that is continually
f transition to meet requirements in all parts of the country.
ry imaginable article, either in sewn or riveted work, from
t and lightest boots or shoes for children, to the strong and
ls worn by adults, may be obtained at this establishment.
y is most comprehensive when we consider that fashion
n this manufacture, like in most others, a capricious sway,
oing into the extremes of our ancestors, whose pointed shoes
must have been more eccentric than useful, the good taste
esent generation has exercised itself very reasonably on this
rticle of dress, and amidst the differences of style we may
at solidity and a greater convenience of shape prevails than
hile the price of such goods places them within the means of
ns.

atisfactorily proved, in 1851, that the improvements which
made by English manufacturers have enabled them to com-
the foreign. If the visitor will examine the boots and shoes
ssrs. Preston, this favourable opinion will be found verified
spect. This is the result of using the best materials, well-
ther, and employing skilful workmen, who have not served
rticeship at the stall or in the shops of rough and cheap
e can cordially recommend a visit to the ware-rooms of
ton.

A few words are due to the *Leicester Journal*, one of t papers in the country, having been established in the year regularly published from that time to the present. It does n aim at giving extended local reports, but rather affects compr ness, and above all, accuracy and impartiality, which latter fe secured it the confidence of men of all political persuasions. also at supplying the requirements of a first-class family journ

Our travelling friends should not fail to visit the Boo Establishment of Messrs. Spencer, Brothers, in the Mar Guides, views, and maps of the town and neighbourhood ca cured here; and should the visitor prolong his stay at Leicest find here an excellent Circulating Library, on the same pl famous Mudie, of London. A large Printing Office is conne this business. The Handbook to the town by Mr. Spence compiled, and very suitable for the visitor.

The Hotel which we can recommend from *personal kno* Boyer's, The Bell, in which the county meetings, balls, &c., This is one of the best conducted hotels in the kingdom.

On leaving Leicester we continue our route on the Midland to Syston, Melton Mowbray, Oakham, Stamford, and borough, where we join the main line of the Great Northern is four miles and three quarters from Leicester. Syston Pa residence of Sir J. C. Thorold, Bart.; the mansion is a fine s and is situated amidst fine natural scenery. Melton Mow next station of interest in the route, is fifteen miles from It is of world-wide celebrity for the sporting carried on subscription hunt, to which it gives name, being a rendezvo *élite* of the turf. The season lasts five months, from Nov March, during which the town wears an animated appearance. over several intermediate stations, we reach

Stamford Station, forty miles and a quarter from Leicest

The road or lane facing the railway gates leads to the Geor formerly one of the most famous coaching-houses on the Gre Road. Turning to the right we see before us the Bridge, built on or near the spot where it is alleged a stone bridge wa Alireu, King of Denmark. On the right of the bridge is a pr

river Welland, which here divides St. Martin's Stamford Northamptonshire, from Stamford proper, which is in Lin- On the left is the Hospital, founded by Lord Burleigh, for t of decayed men and women.

STSTON PARK, LEICESTERSHIRE.
om a beautiful engraving published by Mr. Ridge, of Grantham.)

cend St. Mary's Hill (which is described by Scott as "the cene between London and Edinburgh"), passing an ancient n Gate, on the left, opposite which is the Town Hall, with Gaol in the rear. The Hall, in addition to the require- Council, contains a Sessions Room, and accommodation for ies. On the exterior are the arms of the Borough, quarter- arms, Stamford being the only town in the kingdom which llege. Here also are contained the very superb silver gilt e records and charters of the Borough; Stamford, in this ng been more favoured by royal privilege than any other he country.

urveyed the Hall, the striking and majestic piece of archi- re us is the Church of St. Mary, the mother of the district. ble portion of the church and the tower are of the Early le, the date of which is about A.D. 1200; the "Decorated

Spire" was built about a century later. The tower contains eight bells, on which play a fine set of chimes at three, six, nine, and twelve o'clock. The interior, which has been recently restored, contains some rich ancient monuments, and a chapel with a gilded roof.

SOUTH-EASTERN VIEW OF STAMFORD.
(*From a lithograph published by Mr. Langley.*)

The street at the top of the hill is St. Mary's-street, turning towa the right of which we find, opposite the church, the Stamford Hot commenced in 1810 by the late Sir Gerard Noel, Bart., and complet at a cost of upwards of £40,000. A little further on the opposite s is the Theatre, having passed which, we observe, in the open space the right, St. George's Church, built by the first Garter King-at-Ar in the fifteenth century; in it are contained some fine monuments the Cecil family, and the interior of this church has also been resto within a recent date.

Returning past St. Mary's, and continuing along the western port of the street of that name, we next come to St. John's-street, and Church of St. John the Baptist, built about the same period as George's. The inside of this church has lately undergone a thoro

and refitting, and two magnificent stained-glass windows have
d. The one at the east end represents the Visit of the Magi,
nencement of our Saviour's career upon earth, and the west
as been recently erected as a memorial to the memory of the
Newcomb, Esq., by his nephew R. N. Newcomb, Esq., at a cost
ineas. It represents the Rising from the Tomb, the termi-
our Lord's terrestrial office.
en space into which St. John's-street leads is Red Lion-square,
butter market is held. Crossing the square we see immedi-
ont of us All Saints' Church, the interior of which is about to
d. A portion of the church was built during the twelfth cen-
the tower and spire, with additions, in the fifteenth.
w proceed down All Saints'-street; passing the Roman Catholic
n the right, we reach St. Peter's-hill, where once stood St.
hurch, which, with many others of the fifteen parochial and all
ntual churches of Stamford, has become a matter of history.
ling in a commanding situation in front of the hill is the
Institution, built in 1843. Secretary, Mr. Ford. The In-
is supported by about 300 members. It contains an excellent
nd on the top of the building a camera obscura, affording
and interesting picture of the town and neighbourhood.
g the spot where formerly stood St. Peter's Gate, on the left
is a bastion of the ancient walls of Stamford, we arrive at
of the once magnificent and extensive Austin Friary, on the
on the right is the charmingly situated Rutland-terrace.
ad from hence, after crossing the Ermine-street, a Roman
way, about 200 yards further on, leads to the present village
ll, one mile and a half distant, and thence to Uppingham and
. Retracing our steps to Red Lion-square, we re-cross to
's Church, which we leave on the right, and advance up the
trading street in the town, the High-street, about the centre
on the right-hand side, is the office of the *Stamford Mercury*,
t, the most widely circulated, and we believe the largest single-
vincial paper in the United Kingdom. On the same side of
t is St. Michael's Church, completed in 1836, and a little
n is the Portico, built for a butter market, but now used as a
green market, and for the *Police Station*. Farther on the
the ancient gateway of Brazennose College, one of the nume-

rous schools of learning which existed in Stamford in the reign of Edward III. Arriving at the termination of the continuous line of houses, we leave the site of the house of the "Friars of Orders Grey" on the right, the sites of St. Stephen's and Trinity Churches on the left, and the ancient gateway before us is that of the Carmelites, or Whitefriars Monastery, formerly one of the most magnificent and influential houses of the order in England. The gateway is now converted into a porter's lodge for the Stamford, Rutland, and General Infirmary, which has good revenues, but is partly supported by voluntary contributions. The road on the left of the building leads to the rising town of Bourne, ten miles distant, and that on the right to Deeping and Spalding.

The visitor to Stamford should not omit to see

URLEIGH, or Burghley House, the princely seat of the Marquis of Exeter, situated about a mile and a half from Stamford.

The founder of this house and family was William Cecil, a gentleman who accompanied the Duke of Somerset to Scotland. At the battle of Musselburgh Field he narrowly escaped being killed; a gentleman, who out of kindness pushed him out of the level of a cannon, having an arm shattered as he withdrew it. On his return he was made Secretary of State, and in some political trouble was sent prisoner to the Tower; but no charge being brought against him, he was released from his captivity, again made Secretary of State, became a privy councillor, and received the honour of knighthood. During the reign of Mary he attached himself to the fortunes of her sister Elizabeth, and when she ascended the throne, honours were lavished upon him, and he became Baron Burleigh. By his wisdom and talents he illustrated in a remarkable degree the reign of the Virgin monarch.

The mansion is built on ground where there is but little undulation *of surface. At the* northern extremity of the domain stand the Park

built at a cost exceeding £5,000. The park is about two miles
h, and a mile and a half in width. On entering this enclosure
ed to the house, we pass a noble piece of water, three quarters
e in length, spanned by a handsome bridge of three arches. In
k are the remains of the ancient Roman road, Ermine-street.
rriving opposite the mansion, the eye is bewildered at its unusual
its numerous tur-
d the spire of the
rising above the
, give it the aspect
wn, comprised in
tively diminished
ther than a single
The annexed en-
exhibits a portion
west front. The
l entrance is on the
side, and offers a
of nearly 200 feet,
with three ranges
square-headed win-
vided by stone mul-
d transoms. The
is varied by towers
angles, surmounted
ets, with cupolas;
ntage is varied by
ng bays between the
a pierced parapet,
to that represented
ngraving, occasion-

BURLEIGH HOUSE, PORTION OF THE WEST FRONT.

bellished with ornaments that mark the Elizabethan era, crowns
s. In the arched roof under the passage to the interior court,
as in the first instance intended to be the chief entrance, are
ons of the family arms, one of which is inscribed W. DOM.
LEY, 1577. Queen Elizabeth frequently visited her favourite
here, and James I., on his journey from Scotland, came to
. *Our present gracious Sovereign* has also honoured

PARAPET, BURLEIGH HOUSE.

the magnificent old mansion with a visit.

Entering the court, the beauties of the architecture become apparent. Our engraving represents the entrance from the courtyard. The eastern side is the most highly decorated. Four large gates from the various sides open into the court, and give entrance to the several portions of the building, which contains nearly one hundred and fifty apartments, many of them of great dimensions, and in gorgeous profusion of decorative ornament, and splendid furniture. It is impossible to speak too highly of the ele-

ENTRANCE FROM THE COURTYARD, BURLEIGH HOUSE.

gance and splendour of the interior. The Great Hall is sixty-eight

THE QUADRANGLE, OR INNER COURT, OF BURLEIGH HOUSE.
(From a Lithograph published by Mr. Ford.)

feet long and thirty feet broad. It has a fine open-worked timber roof. This apartment is ornamented with paintings and statuary. The other rooms contain a valuable collection of pictures by the first masters, with a choice cabinet of enamels and miniatures. The whole mansion, and the numerous portraits it contains of the distinguished personages of the sixteenth century, carry one back to the glorious and prosperous reign of Elizabeth; and, to carry the illusion further, the visitor will be *shown the identical bed*, with its green and brocaded

curtains, upon which the Queen slept, and which is preserved exactly in the state in which she left it.*

Pursuing our railway journey on the Midland line from Stamford, we pass the stations of UFFINGTON, HELPSTONE and WALTON, reaching PETERBOROUGH, to which station we shall return in another portion of the Guide. We now request the reader to accompany us on

THE MAIN LINE

of the GREAT NORTHERN RAILWAY from HITCHIN, thus resuming our route from London to York.

Five miles from Hitchin, traversing a picturesque and richly cultivated country, the train arrives at

ARLSEY and SHEFFORD-ROAD STATION, thirty-seven miles from London, and four miles north-west of Baldock.

Arlsey, a parish in Bedfordshire, was anciently a market-town. Among the monuments in the church is one to the memory of Richard Edwards, who is called, on his epitaph, the last Grand Reader of the Temple. *Arlsey House* is the seat of J. Edwards, Esq.

Shefford is a chapelry of Campton, in the same county, situated on the river Ivel, from which there is a canal communication to Biggleswade. Robert Bloomfield, the poet, died here in 1823.

Near Baldock, in the neighbourhood, is one of the ancient roads by which Bedfordshire is crossed, the Roman military way, which preserves a direct course to Chesterfield.

There are many handsome residences about Shefford. Westward is *Henlow Grange*, a mile further on the left is *Clifton Manor*, and two miles beyond Shefford is *Southill House*, seat of W. H. Whitbread, Esq., where the unfortunate Admiral Byng was born. An inscription in the churchyard, over his remains, records the circumstances that terminated his career in 1757. Beyond Southill is Old Warden, and near this is *Chicksand Abbey* and *Hawnes Park*. *Ampthill Park*, the stately residence of Lord Holland, is well worth the visit of an excursionist. It contains a valuable collection of paintings, a library, and a museum. The park is very extensive, and is remarkable for the large number of fine oaks within its precincts. The Alameda is a beautiful grove of

* Dr. Waagen observes of Burleigh House, "I have seen no other seat which affords so completely, and on so grand a scale, a view of the taste in the Arts which prevailed among the English nobility from the middle of the seventeenth till about the end of the eighteenth century."

linden trees, planted by the late Lord Holland for the recreation of the inhabitants of Ampthill. In the old castle, which stood on higher ground than the present mansion, Catherine of Arragon resided, while the business of the divorce was pending, and it was here the Queen received the summons to attend the commissioners at Dunstable, which she refused to obey. To commemorate this event a monument was erected in 1774, on the site of the obliterated castle, with an inscription from the pen of Horace Walpole.

Four miles south of Shefford is *Wrest Park*, the seat of Earl de Grey. Four miles from Arlsey the train reaches

Biggleswade Station, renowned for the fruit and vegetables which are produced here in great abundance and sent to the London markets. In the vicinity of the town and the parish of Sandy there is a tract peculiarly favourable to the cultivation of garden produce, and on this account very valuable. The town, which is one of the largest in Bedfordshire, is seated in a fertile valley on the Ivel. The neat appearance and improved condition of the place is attributable to a great fire in 1785, which burned down many unsightly buildings; since which more substantial edifices have been raised. The formation of the railway has also greatly contributed to its prosperity. The air is pure and salubrious, and there is an ample supply of excellent water. The environs abound in picturesque scenery. These and other recommendations have attracted many residents to Biggleswade.

The church is an ancient structure, founded about the year 1230, formerly collegiate, in the Early style of English architecture. The chancel was erected in 1467 by John Reeding, archdeacon of Bedford, whose arms are carved on some wooden stalls in the north aisle.

In the neighbourhood are several handsome mansions, among which we may mention *Shortmeade House*, *Ickwell Bury*, *Old Warden*, and *Stratton Park*, where the valuable Cottonian Library was preserved after its removal from Connington, during the Civil Wars of Charles I.

After leaving Biggleswade, the iron road traverses a beautiful country, presenting on every side indications of rich cultivation, for which the county is justly renowned. Bedfordshire has long been celebrated for its abundant produce of wheat and barley, the Vale of Bedford being the finest corn district in the kingdom. The country becomes more level, the cuttings and embankments on the line lose their picturesque appearance by their *diminished height, but increase* tenfold in distance.

At Langford, near Biggleswade, is an embankment eight feet only in height, but 2,300 yards long; just beyond which commences a cutting 2,000 yards long and 18 feet deep.

Three miles and a quarter from the last Station we reach

SANDY STATION, where passengers for Bedford and Potton's are set down. Near the Station there is an embankment on the line 6,000 yards long and about 13 feet in greatest depth. The pastoral appearance of *Sandy*, one of the great providers of the London dessert tables, contrasts favourably with its ancient reputation as a military station of the Romans, when it was surrounded by ramparts, and formed the encampment (as some assert) of Cæsar, after sailing up the river Ivel from Lyne. On the top of Galley-hill, which marks this spot, is a fine walk shaded by lofty trees, and interspersed with luxuriant vegetation. To the right of the camp are several hills canopied with fir trees, and covered with a redundancy of broom, heath, and moss. In one of the hills there is an excavation called *St. John's Cave*, probably the abode of some hermit in former times.

In forming the Great Northern Railway, specimens of ancient coins, armour, and skeletons were found.

On the right of the main line at Sandy the traveller will perceive a single line of rail branching off through the estate of the late Captain Sir William Peel, R.N., a length of seven miles, which was completed at a cost of £14,000. At the cottage built by this lamented commander is shown the muzzle of the gun from which the signal shot was fired for opening the siege of Sebastopol. There is also in front of the building a 98-pounder, from which the last shot was fired when Sebastopol fell.

Resuming our route in the train, we are carried, on leaving Sandy, in the direction of the river Ouse, which runs into Huntingdonshire, between Eaton-Socon and St. Neot's, leaving the former town on the left, and further on the church of Eynesbury, which is said to have derived its name from Enulph, a Saxon saint, who, drawing around him a number of converts, called the place *Enulphsbury*.

Two miles west of Sandy Station, on the left, are *Muggerhanger Park*, *Bluham Park*, and the *Manor House*. One mile east, the *Hassells*, *Everton Hall*; three miles further, *Waresley Park*, *Gamblingay*, and *Woodbury*. A little more distant, eastward, is *Bourne Hall*, the seat of *Earl* Delawarr; two miles south of which is *Wimpole Hall*, the stately *residence of the Earl* of Hardwicke. The grand entrance to this

mansion is by a double flight of steps leading to a number of handsome apartments. The grounds are decorated with ornamental hedges and several sheets of water, to which the river Cam lends its tributary aid.

The picturesque church of Wimpole is at the side of the mansion. The windows are ornamented with the arms of the ancient family of Yorke, and their alliances, and a curious representation of King David playing on the harp. There are several monuments, the principal of which is one to the memory of Lord Chancellor Hardwicke..

From Sandy a distance of nearly eight miles has to be traversed through a fertile country, and between an embankment 2,100 yards in length and 23 feet deep, before we arrive at the

ST. NEOT'S STATION, 51¾ miles from London, and seven miles south-south-west of Huntingdon.

ST. NEOT'S.

The town, which is seated on the eastern bank of the river Ouse, which is crossed by a handsome stone bridge, with three low towers, is about three quarters of a mile from the Station. The name recalls its monastic origin, being derived from St. Neot, a learned Christian missionary, who died about 880, and whose remains were transferred from Cornwall to this place. A monastery was founded in his honour. But the bones of the saint *were not allowed to rest* in peace, for in 1003

they were removed to Croyland to protect them from the ravages of the invading Danes.

After the Conquest, this estate, with many others, formed part of the dowry of the Princess Judith, and through the marriage of her daughter to Prince David, afterwards King of Scotland, it passed to the Scottish Crown. The priory was seized by Henry VIII. in 1539. The present church was erected in imitation of it. It is a remarkably fine specimen of the later English style of architecture, with an elegant tower. In the interior is a fine timber roof; also some ancient screen-work.

The town consists of several streets, containing some well-built houses. The manufacture of paper is carried on to a considerable extent. The market-place is spacious and convenient. Several fairs are held here during the year.

After leaving St. Neot's, but off the line, are several places of great historical interest; such as the picturesque ruins of *Stoneley Abbey*; and distant about six miles is *Kimbolton Castle*, the seat of the Duke of Manchester, celebrated as the residence of Catherine of Arragon, after her divorce from Henry VIII., until her death. At that period the castle was double-walled, and of great strength. It is surrounded by a spacious and beautiful park. The parish church of Kimbolton is very

OFFORD CHURCH.

ancient. It has castellated battlements, deep buttresses, and a lofty spire. In a little enclosure, once a chapel, are two marble tablets to the memory of the

second and third wives of Lord Mandeville, afterwards Earl of Manchester, the Parliamentary general. A monument in the church, rich with scroll-work, records the titles of King James's Lord High Treasurer.

But to resume our journey. A little north of St. Neot's are *Paxton Hall* and *Paxton Place;* two miles further is *Diddington House,* the seat of G. Thornhill, Esq., and *Stirtlowe,* after which is *Buckden,*

BISCHENSBOOKE HOUSE.

formerly the episcopal mansion of the Bishops of Lincoln. The ancient palace consisted of two quadrangular courts and a gate-house, a venerable brick structure, surrounded by a moat.

The church at Buckden contains several fine monuments to the Bishops of Lincoln.

Four miles from St. Neot's the train, after proceeding between an embankment 2,200 yards long and about eight feet high, reaches

Offord Station, consisting of two parishes, *Offord D'Arcy* and *Offord Cluny,* situated in a rural neighbourhood on the *eastern bank of the Ouse.*

Offord D'Arcy Church displays some remains of Norman architectu

GREEN WAY, HINCHINBROOKE HOUSE.
(*From an old print in the British Museum.*)

in the columns and arches of the north aisle. Within the altar-ra

OLD COURT HOUSE, GODMANCHESTER.

are some memorials of the Nailours, formerly lords of this manor. In the south aisle is a half-length brass of a knight in complete armour, Sir Lawrence Pakenham.

Leaving Offord Station, and approaching Huntingdon, we have a distant view of *Hinchinbrooke House*, the seat of the Earl of Sandwich, situated on an eminence, about half a mile westward of Huntingdon, and surrounded by thick groves. From this spot a magnificent view is obtained over the surrounding country. This place is celebrated as having been the residence of Oliver Cromwell, whose family were possessed of it from the days of Henry VIII. It was here that Sir Oliver Cromwell, uncle of the future Protector, received and entertained James I. on his royal progress from Scotland to London.

On the right of the line appears the ancient town of *Godmanchester*, once a Roman station. Our engraving (p. 108) represents the curious old Court House, erected in 1679.

TOOL-BOX IN GODMANCHESTER CHURCH.

After crossing the Ouse by a handsome bridge of three arches, we arrive at

HUNTINGDON STATION, fifty-nine miles N.N.W. of London. The town is pleasantly situated upon a gentle acclivity on the northern bank of the river Ouse. It consists of one principal street, extending a mile in length, and intersected at right angles by several smaller streets. The houses are, in many instances, large and commodious; and amongst the most interesting is one erected on the site of the house in which Oliver Cromwell was born, after whom it is called. This house has been somewhat modernized, and is now the residence of G. Rust, Esq. There are two churches only remaining of the fifteen said to have flourished here when the town itself was of more importance. The church of All Saints is supposed to have been built in the reign of *Henry VII.* *It has a fine perpendicular* tower, with a good

entrance on the west side. The interior contains several monuments of the Cromwells; and here Oliver himself was christened, as is testified by an entry in the parish register. St. Mary's Church is the more ancient of the two. A third church has been erected at the expense of Lady Olivia Sparrow, who resides at Brampton Park, two miles distant.

TOWER OF ST. MARY'S CHURCH, HUNTINGDON.

Traces of the entrenchments of the castle, built in 917, are still seen.

The public edifices in Huntingdon are the *Town Hall and Assembly Rooms*, the *Hospital of St. John*, and *New Infirmary*, &c. In the *Grammar School*, Oliver Cromwell received his early education.

At Huntingdon there is a loop line to the town of *St. Ives*, so called in honour of a Persian bishop, who travelled in England about 600; here his relics were discovered, which led to the foundation, in 1001, of a church dedicated to this saint, wherein were placed a prior and monks of the Benedictine order, who were imported from Romsey. The priory, barn, and dovecot, are all that remain to mark its site. St. Ives is a parish and market-town, five miles east of Huntingdon. Here Oliver Cromwell had a farm, prior to his being chosen burgess for Cambridge. He was at that period overseer of St. Ives Green, probably then used as a cattle-market, and his name appears in the parish records as such.

Proceeding on our journey from Huntingdon, we pass the Union Workhouse on the east side, after crossing the Great North road by a viaduct, and presently come to some deep cuttings, 3,000 yards long, and 39 feet at its greatest depth, until, reaching the level once more, we see on the right, the spire of Wood Walton. The most extraordinary *and stupendous cuttings* on the line are those which cross the fenny *lands near the Mere*, by Connington, Sawtry, and Wood Walton. The

embankment at this spot is 8,338 yards long, and 48 in height, consisting of 1,218,000 cubic yards.

OLD GRAMMAR SCHOOL, HUNTINGDON.

On the left are the remains of *Sawtry Abbey*, of ancient origin. Leaving Sawtry, we approach the magnificent tower of Connington, formerly the residence of the antiquarian Cotton, who within these walls amassed the greater part of his invaluable collection of manuscripts and ancient books. The present mansion was chiefly constructed by Sir Robert Cotton, from the materials which formed the great hall of Fotheringay Castle. In the ancient church is preserved the chair from which the hapless Mary of Scotland arose to submit her neck to the axe of the executioner. It was discovered in a room of the belfry.

At length we reach

Holme Station. The town was formerly famed for the immense quantity of fish which were caught in the fens, and sent in great quantities to the London markets; but since the draining of Whittlesea Mere, that branch of traffic has ceased. Proceeding forward on the left, is *Stilton*, where, it is said, the well-known cheese, chiefly prepared in Leicestershire, was first *sold*, and called "Stilton." North of this town is *Norman Cross, and on the front of a hill* is the venerable tower

PETERBOROUGH FROM THE LINE.

of the parish church of Yaxley. On the high road, to the right, is the church of Farcet, about three miles south of Peterborough. Shortly afterwards we arrive at PETERBOROUGH STATION, six miles from Holme.

PETERBOROUGH is a city of ancient date. Peada V., King of Mercia, during the Saxon Octarchy, founded a monastery in 665, which was completed by his brother Wulphere in atonement for murdering his two sons. This monastery, named St. Peter, became celebrated for the richness of its endowments and the magnificence of its buildings, and gave the name to the city. The monastery was plundered and burned by the Danes in the ninth century. It was restored, however, in the subsequent century by Ethelwold, afterwards its abbot. In the reign of William I. the monastery was plundered by Hereward, a Norman robber, who landed in Lincolnshire and attacked the place. To prevent the recurrence of such attacks, a fort called Mount Turold was erected (now called Toothill). In 1116 the monastery and town were injured by fire, two years after which the present cathedral was commenced by Abbot Salisbury, and the

rebuilt. The city was injured in the wars between the King John, whose soldiers plundered the treasury. The ry forces stationed here in the reign of Charles I. committed dations, and pulled down portions of the Abbey, the mate- ch were sold by order of Parliament. The city has much ce the introduction of railways. The population, in 1861, at 11,728 against 8,673 in 1851. This is an evidence of n roads can effect.

ket-house, standing in the vicinity of the Cathedral, is a structure. The ancient city gaol has been superseded by a There was formerly a theatre, but it is now converted into change. The trade carried on is chiefly in corn, coal, , bricks, and stone. Peterborough is one of the centres radiate three lines of rail to London: *the Great Northern*,

THE MARKET HOUSE, PETERBOROUGH.

mpton route, and the Eastern Counties with all its Norfolk fiens.

nning glory of Peterborough is the magnificent CATHEDRAL, the dissolution of religious houses under Henry VIII., was

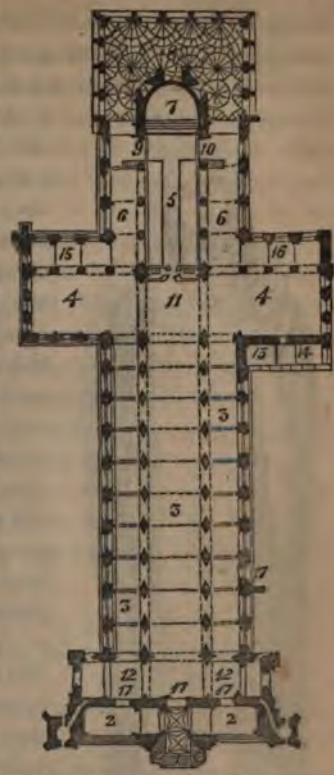
one of the most important abbeys then existing. It is a regular cruciform structure, of Norman or early English character, remarkable for the solidity and massiveness of its construction. The erection of it was commenced in 1117 (after the great fire of the year preceding), by John de Sais, or Seez, a Norman, then Abbot. It is probable that the choir was the part first erected. It has a semicircular eastern end, and at the extremities of the semicircle there are two slender turrets crowned with pinnacles; the aisles have subsequently been carried out square by an addition of perpendicular character. The chancel was

PETERBOROUGH CATHEDRAL.

finished in 1140; the great transept, and a portion of the central tower, were built from 1160 to 1175; the nave from 1177 to 1193. The central tower is low and forms a lantern.

Though the general character of the architecture is Norman, or early English, great alterations have been made in later styles. Nearly all the windows have had tracery inserted, and some of them have been enlarged. The ceiling or inner roof of the nave, and of the great transepts, is painted wood. Latterly, a new organ-screen of stone has been erected, and the choir has been fitted up with stalls, throne, pulpit, and *altar*-screen. The organ-screen consists of an entrance into the choir,

richly moulded pointed arch, nted by a crocketed canopy. nole of the fitting up of the s in the style of the time of l III., and the wood-work is of chly ornamented. There are rnuments, shrines, or chantry the devastations of the Par- ary troops having deprived the of many of its ornaments of ss. The burial-places of the eens, Catherine of Arragon and f Scotland, both of whom were l here, are unmarked by any ral monument.* The total of the church is 476 feet 5 breadth at the great transepts, ; length of western front, 156 ight of central tower from the 150 feet. The view of the al is confined on every side the west, at which end is a ourt, the entry to which from rn is by a gateway of Norman cture, with some later additions. south side of the court is a f the ancient monastic build- taining much of their primitive nce, and having, in the midst m, the tower gateway to the



PLAN OF PETERBOROUGH CATHEDRAL.

1. Porch.
2. Piazza.
3. Nave and Aisles.
4. Transept.
5. Choir.
6. N. & S. Aisles of Choir.
7. Altar.
8. Lady Chapel.
9. Queen Catherine's Tomb.
10. Mary Queen of Scots' Tomb.
11. Central Tower.
12. West Towers.
13. Chapel.
14. Chapter Room.
15. Chapel of St. James and St. John.
16. Vestries.
17. Doors.

the principal entrance to the Cathedral is the gravestone of the sexton who ose queens; and on the wall above, his portrait, with a spade, pick-axe, and skull, tical inscription beneath. Old *Scarlet* died at the age of 98. The body of the Scots was brought from Fotheringay Castle, where she was beheaded, July 30th, on the following morning was committed to the vault prepared for it on the of the choir, close to the Bishop's throne, which was immediately closed without ous service. The remains of the Queen did not, however, rest long in this grave; five years afterwards they were removed, by order of James the First, to their gnified place of sepulture, the *chapel of King Henry the Seventh*, at Westminster.

Bishop's Palace, over which is the Knights' Chamber. There are many features in these antiquarian remains which will delight the curious visitor. "In one part of the Close is the Norman gateway (we have mentioned); in another, one of the Tudor period, covered with arms and badges; here, in the Cloister Court, is a doorway, with a foliaged semicircular arch beneath the pointed, the style of one period struggling with the next; and there, terminating the buttresses around the Lady Chapel, is a series of large sitting figures, the work of a later date." On the greater part of the other sides, the Cathedral is surrounded by the ancient cemetery of the citizens, which is filled with tombstones. The gate of entrance to this cemetery, from the western court, is by a late perpendicular gate, remarkably rich in ornament. This cemetery is not now used, and a new burial-ground has been formed on the western side of the city. The cloisters cover a space of 130 to 140 feet square: in the stained windows are the portraits of abbots, and the annexed figure which our artist has copied.

FIGURE FROM PETERBOROUGH CATHEDRAL.

Paley, the glorious author of the inimitable and unanswerable "Evidences of Christianity," was a native of Peterborough.

The **GREAT NORTHERN HOTEL,** close to the Station at Peterborough, is now in the hands of Mr. George Wilkins. It has recently been considerably enlarged, and indeed almost rebuilt. The Coffee Room is unusually fine. The Billiard Room, Smoking Rooms, and Bed Rooms are all large, suitably furnished, and extremely well ventilated.

We cannot leave this city without a word in favour of the important *agricultural works of* Messrs. Amies and Barford. Our readers would

o visit this large depôt for all kinds of agricultural implements.
terborough is *Apethorpe*, the residence of the Earl of Westmore-
he mansion is of various periods; the oldest portions, built in
eenth century, in the Gothic style, have been altered. The chief
a stately court, is of the period of Elizabeth. The finest works
Apethorpe are the plaster casts of the family of Niobe, a pre-
n the Grand Duke of Tuscany.

four miles from Apethorpe is *Fotheringay Castle*, long the prison
happy Mary Stuart, and the place of her execution. The castle
led by James I., but from the hill which was once the rampart
tle, an extensive view over the fertile and richly-wooded coun-
tained. The church, a pretty edifice of the time of Henry V.,
the exception of the choir, well preserved. The tower is of
portions, and terminates in an octagon. The interior has a
the style of King's College Chapel, Cambridge, but of wood,
s a good effect. There are two stone monuments in the later
cted by Queen Elizabeth in 1573, to the Duke of York who
gincourt, and to the Duke of York who met with his death under
I. at this place.

EAST LINCOLNSHIRE LOOP LINE.

ll now conduct the traveller, who may be desirous of seeing
colnshire, by the Great Northern Loop Line, which, com-
at Peterborough, terminates our excursion, in this direction,
Grimsby.

gh Lincolnshire is now intersected by railways in every direc-
none of these were opened before the year 1846, when the
Lincoln to Nottingham was completed.

reat Northern Loop Line, the East Lincolnshire Railway, and
chester, Sheffield, and Lincolnshire Railway, were all opened
but the Great Northern Direct Line, from London to York,
completed between Peterborough, Grantham, and Retford
2.

ow, having entered upon the land of the Fens, the Moors, and
s, the reader may naturally wish to know some of the pecu-
f the country through *which he is passing.*

Lincolnshire is the largest county of England, excepting Yorkshire, and the rival, in agricultural importance, of Norfolk and Devonshire. It also ranks thirteenth among the counties in amount of population.

Many striking evidences of British energy and perseverance are presented in the history of Lincolnshire. Its extensive fens and levels were formerly watery morasses, yielding little besides geese and wild-fowl; but they are now well drained and cultivated. Improvements in agriculture, especially as regards draining, irrigation, &c., have rendered the soil most productive.

The *Fens* occupy the south-eastern part of Lincolnshire, and consist of lands which have been saved from the inundations of the sea at various periods. Mention is made, in the time of the Conqueror, of the drainage of some parts. The large tract of fen, Deeping, Spalding, Pinchbeck, Thurlby, and Bourn, was reclaimed in the 17th James II., by a company of "gentlemen adventurers," as the principals were then called. Between Boston and Spilsby, the east fen comprises about 14,000 acres of land.

The *Heaths* occupy the western side of the county, extending from Lincoln to the river Humber; and southward, to Grantham and Leicestershire; and they are traversed by a bold range of hills, called the Cliffs, varying in breadth and altitude, and in some places separating into two lofty ridges.

The *Wolds* occupy that part of the county extending northward from Spilsby, Horncastle, and Wragby, to Caistor and Barton-upon-Humber, bounded on the west by the Ancholme Valley, and on the east by the marshes on the coast, and broken into bold hills, high table-lands, and picturesque valleys. The wolds, wealds, or wilds, are supposed to have been so called from the wild state of the country in ancient times.

The higher parts of the wolds and the Cliff hills command extensive and delightful prospects. On the hills overlooking the Trent falls, and the broad waters of the Humber, the views are magnificent.

The wold farms are generally very large, extending from 500 to upwards of 1,000 acres; but the fen farms are small, averaging from 100 to less than 50 acres.

The line of railway from Peterborough to Grimsby, being through a flat country, presents few striking features. The principal of them are *the bridges, which* carry the line across the various rivers, both natural

cial, which serve as outlets for the drainage upon which the
epends.
these few preliminary remarks, which the traveller, who may
his stay in Lincolnshire, will be enabled to confirm, we will
n our description of the various stations on the line, commenc-

E AND CROWLAND, the first place at which the train stops
ng Peterborough.
d or *Croyland* is celebrated for its once splendid abbey, and
ing the oldest bridge in England. The town consists prin-
four streets, which being intersected by the river Welland,
atwater drain, are connected by means of the curious triangu-
mentioned above, and an engraving of which may be seen in
"Architectural Beauties." This structure is supposed to date
and is formed of three semi-arches, whose bases stand in the
nce of a circle equidistant from each other. These arches
he centre of the bridge, which is steep and narrow. The river
ed over, and crossed by level roads, the bridge is now only
as an object of curiosity. At the end of the south-west wall
e of King Ethelbald, in a sitting posture, supposed to be a
f Saxon sculpture.
ains of the beautiful west front of the ABBEY are in a state
decay. It comprehends three portions, and is divided perpen-
by buttresses diminishing in their progress upwards. The
st chiefly of a portico of the conventual church. The choir,
er, transepts, and the whole of the eastern portion of the
ve fallen down, and the portions now standing are the skele-
e nave, with part of the north and south aisles, the former of
ed as the parish church. Over the west gate are the images
kings and abbots. There is also a representation of St.
ho is said to have lived here as a hermit. Croyland Abbey
d in 716, by Ethelbald, King of Mercia; and after various
fortune, it attained a high degree of splendour. From this
train proceeds a distance of about two miles to
s DEEPING STATION. The village is long and straggling,
eastward from Market Deeping to Deeping Fen. It is on
ank of the *navigable river Welland, which* separates it from

Northamptonshire. The Queen is lady of the manor. A Priory of Benedictine monks was founded here in 1139. The Manor House, a stone edifice near the church, is supposed to be the remains of the priory. The church has a tower, crowned by an octangular spire. A large and striking cross, which was rebuilt in 1819, stands near the church.

Within a few minutes' walk from the station is the residence of Mr. R. Searson, an eminent breeder of short-horned cattle, &c.

About five miles from St. James Deeping, we arrive at

LITTLEWORTH STATION. The Earl of Lindsey and Lord Carrington have estates in this neighbourhood. *Wyham House* and *Cadeby Hall* are close by. Passing through a flat and uninteresting country, at the distance of about five miles, we reach

SPALDING STATION, the largest and most flourishing market-town in

THE TOWN-HALL, SPALDING.

the wapentake of Elloe. The Station lies west of the town, which is situated in the midst of fens and marshes on the banks of the Welland.

Spalding is of great antiquity, and before the Norman Conquest it

seat of the Earls of Mercia. Tanner mentions a priory here, of he famous John of Gaunt was a great patron. The only vestiges building remaining on the original foundation are the ground f a turret, called, from its shape, the "Prior's Oven;" some s, with Gothic windows, in Abbey-yard, and a staircase tower, rt of a house on the south side of the market-place.

ng the places of interest in Spalding and its vicinity we may *Ayscough Fee Hall*, the property of the lord of the manor; *House*, now a farm-house, belonging to Lord Carrington. The *vaccarium*, or dairy of the monks, is now a farm-house at Low

High Bridge, which crosses the Welland from Church-street to street, was rebuilt in 1836. Formerly the sea came up to the Rails, within a mile of the centre of the town.

ing has also a *Sessions House*, *House of Correction*, *Schools*, *Town Hall*, and many good shops.

Spalding there is a BRANCH LINE OF RAILWAY TO HOLBEACH, ce of eight miles by Moulton.

ing our route by the iron road, at the distance of about four m Spalding, we reach

EET STATION. The village is seated near an artificial channel Welland and the small river Glenn. The church is a neat struc- l contains the recumbent effigy of a crusader. A large trade l on here in the manufacture of flax by the Messrs. Aitkin. mile north of the village is *Cressy Hall*, a large and handsome ouse. In former times there was a famous heronry at this place. miles from Surfleet is

RKIRK STATION. The village is near the Fossdyke-road, and its name from Algar, Earl of Mercia, who was slain in this rhood in 879. At a place called Hill Six Acres, are traces of dations of extensive buildings, where the knightly family of resided, on the spot where Earl Algar is supposed to have had e. The old manor-house of Algarkirk is called *Toops* or *Hip-*. The church is a handsome cruciform edifice, with a tower, recently been restored at the expense of the Rev. Basil Beridge. hurchyard is a figure in stone, rudely sculptured, supposed to t Earl Algar.

At *Fossdyke*, a village two miles and a half from Algarkirk Station,

ALGARKIRK CHURCH.

King John lost his baggage in crossing the Welland from Lynn to Swineshead.

Three miles from Algarkirk is

KIRTON STATION. Kirton was once a market town, and is now a considerable village, pleasantly situated on the Spalding road. The Earl of Exeter was formerly lord paramount of the Soke of Kirton, and had here a Sessions Hall, in which was held the great Goose Court, which had jurisdiction over the whole of Kirton wapentake, but it was rendered profitless by the enclosure of the fens, and was discontinued about 1802. The church was formerly collegiate, but falling into decay, the greater part was taken down in 1809 and rebuilt on a smaller scale.

Kirton has its free-school, founded in 1624, with chapels, almshouses, charities, &c.

After leaving this Station and approaching Boston, which lies about four miles from thence, the country assumes a more animated appearance, and gives evidence of the persevering efforts of the Bostonians to extend their town and to render productive the lands reclaimed from the sea. The Station is a neat and commodious building, situated on the west side of the town.

BOSTON, as the largest and most flourishing market town and seaport *in Lincolnshire*, demands our notice. It is situated on both sides of the

Witham, which here forms a considerable estuary, though five miles from the sea. This river flows through the town, and is crossed by an elegant iron bridge of one arch, eighty-six feet in span, after a design by Rennie. The navigation of the Witham has suffered much from the deposition of silt; but since the middle of the last century it has been deepened, and a canal carried from the town to Dogdyke. The quay is now accessible to vessels of 100 tons' burthen, and the river is navigable to Lincoln, whence is a vast inland communication by canals communicating with the river Trent.

Lying in the great level of the Wash, and surrounded by some of the lowest fens and marshes of Lincolnshire, the greater part of the country around Boston was formerly little better than a watery morass, often inundated by river floods and the tides of the ocean, and yielding but little produce, except geese and wild-fowl; but the fens and marshes are now well drained, and yield abundant crops of grain, roots, and grass.

From various discoveries, it is evident that the surface of the country was anciently sixteen or eighteen feet lower than it now is, and that it was, in that state, so sound and dry as to produce large timber trees, the roots and trunks of which have often been dug up.

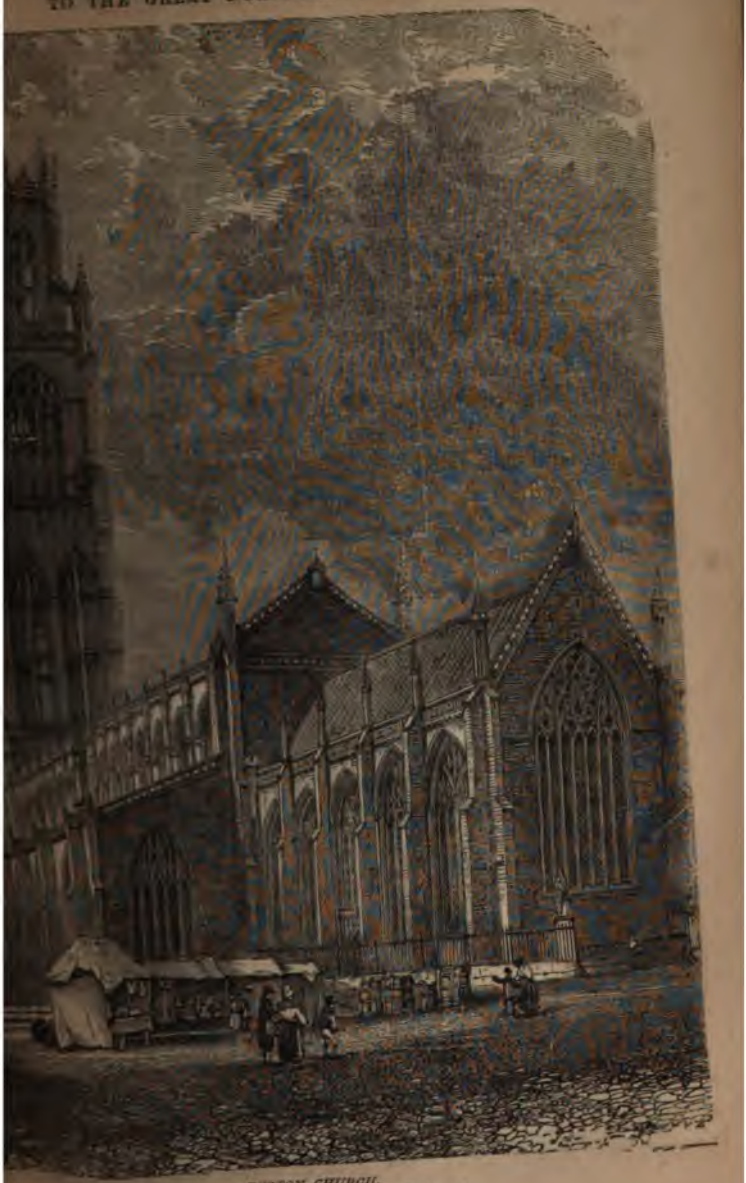
The name of Boston is supposed by some to be a contraction of Botolph's Town, a monastery having been founded here in 650, by the Saxon, St. Botolph, the tutelar saint of mariners. The town is well built, and contains some good houses, with spacious granaries, &c. On the eastern side of the river, it consists of one long thoroughfare; and on the western side are High-street and West-street. The Market-place is a spacious area, lined with good buildings, and near it is the glory of Boston, the parish church, which has one of the loftiest and most beautiful towers in the kingdom, being 262 feet 9 inches in height, and resembling that of the cathedral of Antwerp. It forms a conspicuous landmark for sailors, being visible at sea for forty miles, and is surmounted by a light and beautiful lantern, pierced with eight windows, and the summit crowned by a lofty parapet of open tracery, which rises in the centre, on each side, into a curved gable, originally finished with a vane. This lantern, which is not much older than the middle of the fifteenth century, was, no doubt, intended to be lighted at night for a sea-mark, and to direct travellers across the dangerous marshy land around.

The Gothic tower is said to have been erected chiefly at the expense of Sir John Tilney, whose lady, Dame Margery Tilney, laid the first

BOSTON MARKET-DAY.

stone in 1309, but the nave and chancel are supposed to have been founded a century earlier; and before the erection of the tower, the four angles of the church were adorned with turrets like those at King's College, Cambridge.

The tower is divided into four stories, exclusive of an ornamented basement. In the lower tier are three large windows, full of mullions and tracery. In the next story are two windows on each front, with ogee canopies, and above these is the third story, having one large window in each front. The stone groined ceiling of the tower is one of the finest in England, and is 156 feet above the floor of the church. The centre boss bears the *inscription "Agnus Dei;"* the four principal bosses have emblems of



BOSTON CHURCH.
(*From a photograph by* Thos. *as* Bolton.).

the holy Evangelists, and the next four contain angels, bearing the words, "O Lamb of God."

The length of the church, from the western door in the tower to the east wall in the chancel, is 290 feet, and the breadth of the nave and aisles 99 feet. This church is said to have 365 steps, 52 windows, and 12 pillars, corresponding to the days, weeks, and months of the year.

The ceiling of the nave is of Irish oak, and is supported by 14 arches, with light spandrils, which, by their elegant curves, intersections, and embossments, produce a fine effect. On either side of the chancel are ranges of stalls, the seats of which are ornamented with grotesque carvings. Over the altar is a copy of Rubens' famous picture, "The Descent from the Cross."

A chapel at the south-west angle of the church has been restored, in memory of the Rev. John Cotton, who was persecuted for nonconformity, and fled to New England, in America, about 1650, where he became the first minister, and one of the founders of the city of Boston, in the United States. Some of the principal merchants of that great city raised a subscription for the restoration of this chapel.

Boston has long been in a state of steady commercial prosperity. The exports consist chiefly of the agricultural produce of the county; there is also a considerable trade in wool.

Among the public buildings in Boston are, the *Union Workhouse*, a large brick building on the south-east side of the town, *Corn Exchange*, and *Athenæum*, *Town Hall*, *Sessions House*, *Chapel of Ease*, *Roman Catholic Chapel*, ten chapels belonging to Wesleyans and Dissenters, *Savings Bank*, *Mechanics' Institution*, *Charities*, *Endowed Schools*, &c. Boston market is the region of abundance. Among the places of amusement are the *Theatre*, *Assembly Rooms*, *Vauxhall Gardens*, *Public Libraries*, *News Rooms*, &c.

About 200 yards north of St. John's-row, stand the remains of a large quadrangular building, called *Hussey Tower*, said to have been erected by William Lord Hussey, beheaded at Lincoln, *temp.* Henry VIII.

Near Skirbeck Church is *Rochfort Tower*, but the upper story is gone. It was anciently encompassed by a moat. About two miles east of the town, in the parish of Skirbeck, is *Richmond*, or *Kyme Tower*, supposed *to be* the remains of the ancient chapel of Hiptoft, and containing a

ular flight of stairs, communicating with three apartments and the
A magnificent view of the surrounding country is obtained from
point.

THE BOSTON AND SKIRBECK IRONWORKS, a worthy memorial to the
erprise and skill of the Messrs. Tuxford and Sons, the originators
spirited conductors of the same, next to the magnificent church of
Botolph's, constitute one of the most striking objects which arrest
attention of travellers, as the train rolls onward from the south
ards the seaport town of Boston.

To the eastward of the town, at a short distance from the Railway,
close upon the ancient and humble parish church of Skirbeck, will
noticed a lofty tower windmill, with eight sails or vanes, surrounded
arge ranges of buildings; the eddying smoke from numerous chim-
, the clang of hammers and the anvils' ring, the burr and buzz of
ning wheels, the glare of fire from forge and furnace, proclaim
at in activity and on this *locale* presides the genius of enterprise.
is busy spot is known as *The Boston and Skirbeck Iron Works.*
Hence to all quarters of the globe are sent machinery and mill-
, and steam-engines of various forms and kinds; some, too, of
peculiar arrangement, that to have talked of such a few years back
ld have been cause for merriment. But who laughs now when
rs tell of the "Farmer's Iron Horse," travelling from farm to farm,
ing, panting, whistling, and tugging at its work, as if a thing of
? Or who now would gibe at stories told of feats of steam pedes-
ism? For here have been made, and still are made, engines that
and whistle as they go, which draw the plough and drag the
ed car.* Little was it thought by agricultural men in 1839, when,
the suggestion of the late Earl Ducie's Manager of the "Whitwell
Experimental Farm," the Messrs. Tuxford first designed a portable
Threshing-machine, to pass from farm to farm, that few years
would elapse ere many hundreds would be found aiding the farmer, and
that sheaves of corn, pitched from the stack direct, before they reached
the yard would be so beat and shook and drest, that straw, and chaff,
and corn would each with itself be left, whilst grain for market, lean
corn or tailings, and the screenings should pass into its separate sack?

* Portable Steam-Engines with the Patent Traction Wheels, or Endless Railway, are
here referred to.

is now the case, and here hundreds of workmen daily are the production of these farmer's aids. The Messrs. Tuxford, ent time, hold a position of the highest rank with the Royal al Society of England, several of the Society's *Prizes* having ded to these gentlemen, at the latest trials for their Portable shing Engine.

ton and Skirbeck Iron Works cover an area exceeding many xtent; the several branches of manufacture are carried on t ranges of shops. The Foundry is large, and has in connec- t spacious rooms for storing models; the Boiler-makers' shop modation for a large number of workmen. The Smiths' shop ght-iron store exceed 300 feet in length: the fires are blown n-engine, water circulates to all the forge backs, and every- ch modern science has been able to effect for making this t perfect has been introduced. The large steam hammer en working here. The Machine Builders' shop is 300 feet in ith a gallery overhead, extending from end to end. The tters', and Erectors' shop, now in course of erection, will) feet in length. These various departments, with the requi- and shedding for machinery in progress or finished, and for wood, &c., with the other general concomitants of a large rming portions of these gigantic works, will convey an idea *st-class establishment.* We shall extend this notice in our n.

a few miles of Boston are *Tattershall Castle*, an old brick feet high, and *Bolingbroke Castle* (five miles beyond Langrick ere Henry IV., son of John of Gaunt, was born; and *Wain-* e coast, giving name to the founder of Magdalen College. Before leaving Boston, we must not omit to mention the several eminent men who have been connected by birth or ith that town. Foremost is John Foxe, the martyrologist, rn here in 1517. Richard Hemmyng, founder of Lincoln xford, was Vicar of Boston in 1416, and became Bishop of 1420. John Boston, a monk of Bury, who, in 1410, finished talogue of Ecclesiastical writers, which was of great use to eorge Ripley, a celebrated alchymist, was born at Boston. nnington, son of a fishmonger at Boston, was Lord Mayor of

London in 1500. One of the most esteemed natives of Boston was the late Herbert Ingram, Esq., M.P. for the borough, founder of the "Illustrated London News," a man of singular energy and decision of character. His friends at Boston have raised a handsome monument to his memory.

Returning to Boston Station, we will continue our journey. At the distance of five miles is

SIBSEY, a large village. The church is a spacious structure, and has a tower and eight bells. It was completely restored in 1855. The chancel contains three handsome stone stalls and a piscina.

Nearly two miles beyond this is

OLD LEAKE STATION, situated on the west side of the parish of *Leake*, a large straggling village.

In the chancel of the parish church is the recumbent effigy of a man in armour, supposed to represent a member of the Leake family.

There were formerly two monastic institutions in this place, called the Great or Multon Chantry and St. Lawrence's Chantry. There are some remains of both.

At a short distance is a large ancient building called *Derby Hall*, from having been the residence of the Earls of Derby. It is now divided into several tenements.

On an eminence at a place called the *Floors*, a lighthouse formerly stood, and its base was washed by the ocean before the erection of the present sea-bank.

Three miles from Old Leake Station we arrive at

EASTVILLE, a small village. The cultivation of reclaimed land in this neighbourhood is highly creditable. *Bedlam Farm*, in the neighbourhood, was little better than a morass a few years ago, but it is now in an excellent state of cultivation. The East Fen, of which Eastville and Midville are allotments, comprises about 14,000 acres of land between Boston and Spilsby.

Three miles and a half beyond Eastville, we reach

LITTLE STEEPING STATION, which is in the Fen, about one mile and a quarter south of the village. The latter is seated on the south side of a small river, three miles and a half south-east of Spilsby.

FIRSBY STATION, the next resting-place on our route, is situated about a mile west of the village of that name, and is the nearest

Station for Spilsby and Wainfleet. The village is in the vale of the Steeping rivulet, three miles and a half from Spilsby, which is a small but thriving market town, seated on an eminence which overlooks an extensive tract of marshes and fens, stretching southward to Boston Deep.

The traveller who can spare the time to visit Spilsby will regard it with interest as the birthplace of one of England's bravest seamen, Sir John Franklin, of Arctic celebrity. He left England in 1845 on his fourth expedition in search of the North-west passage, and fell a victim to his zeal and perseverance. He was the son of the late Willingham Franklin, Esq., of Wood Enderley, and brother of the late Sir Willingham Franklin, Knight, Judge at Madras. A bronze statue has been erected to the memory of the great navigator.

Lord Willoughby de Broke is lord of the manor of Spilsby; and in the church are several finely sculptured effigies of his ancestors.

About two miles from Firsby is

Burgh Station, at a short distance from the small but ancient market town of that name, which is pleasantly situated upon a gentle eminence, about four miles west of the sea-coast.

The eminence on which the small town stands is partly artificial, and is the site of a Roman castrum, which overlooked the marshes, and was probably erected for the purpose of guarding the sea-coast against the Saxon rovers. Near it is a tumulus on the summit of Cock-hill, which commands extensive prospects as far as the Norfolk coast.

There were formerly two churches at Burgh, but of that which was dedicated to St. Mary no traces remain. St. Peter's Church is a large and handsome structure, of Portland stone, with a tower and five bells.

About three miles from Burgh is

Willoughby Station, which presents little worthy the notice of the traveller; but Alford, two miles and a half distant from Willoughby, deserves mention. The Station is about half a mile west of the small but ancient market town, which is pleasantly situated on a small brook on the eastern side of the Wolds, about six miles from the sea-coast.

Alford has a clean and respectable appearance. The church is a large ancient structure, with a tower, commanding from its summit

extensive views of the surrounding country and the ocean. The pillars which support the nave have their capitals richly ornamented with carved foliage. In the chancel is a tomb, on which are beautifully executed effigies of Sir Robert Christopher and his lady, who died, the former in 1668, and the latter in 1667. There is a Free Grammar School in the town.

CLAYTHORPE, the next Station on the line, is a small parish, with nothing remarkable; and the same may be said of AUTHORPE, about two miles from the former place.

LEGBOURNE STATION stands a little westward of the village of that name, which has a handsome church, comprising nave, chancel, aisles, and tower. A priory of Cistercian nuns formerly stood in this place, founded before the reign of King John.

LOUTH STATION lies nearly three miles from Legbourne. The town ranks next to Lincoln and Boston, in point of importance and population, in the county. It is a municipal borough, and a neat and well-built market town, nearly a mile in length, seated in the fertile vale of the small river Lud, which feeds a navigable canal on the eastern side of the Wolds, and in the heart of a rich agricultural district.

Louth Church, the lofty spire of which is so conspicuous from the railway, is one of the most interesting objects to the traveller on this line. It is a spacious and elegant building, in the Perpendicular style, erected in the thirteenth or fourteenth century; but the tower and spire were not commenced until 1501. The present spire was raised to its original height about 1844. The nave, chancel, and side aisles are spacious, and the east end has a large centre window, with very beautiful tracery. The registers of Louth Church are nearly perfect from the year 1538.

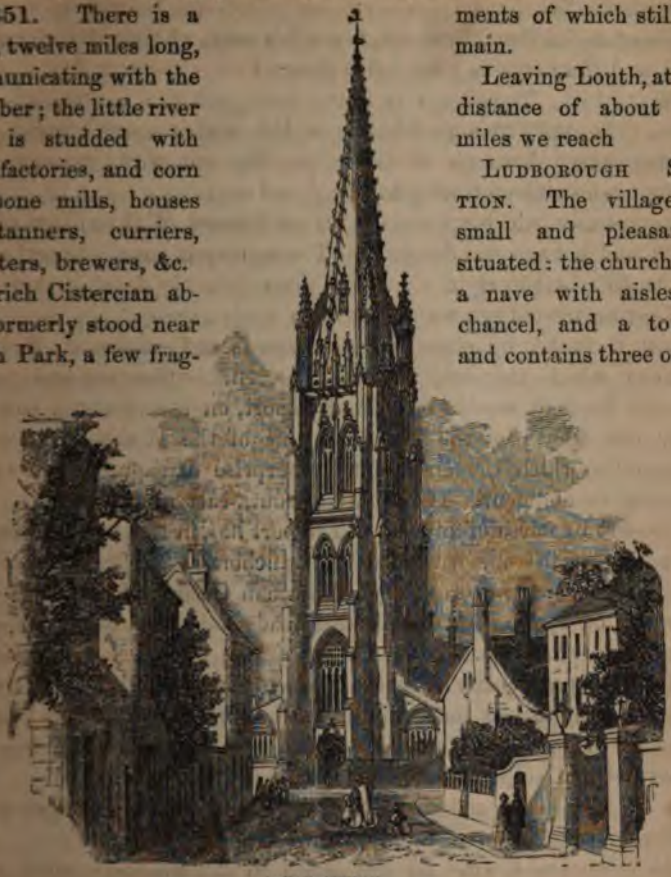
Trinity Church, a neat brick edifice, with octagon tower, was erected in 1834.

Louth possesses several conspicuous public buildings, such as the *Corn Exchange*, erected in 1853 on the site of the old Guildhall: this is a building of good Italian character, with a narrow front of three stories, with pilasters panelled and rusticated, Venetian windows with balconies, and a figure of Ceres in a niche over the doorway; the *Town Hall*, in Eastgate, the public room of which is 100 feet in length, *a fine building*, and erected by Mr. Bellamy, of Lincoln; *Sessions*

use, Gaol and *House of Correction, Free Grammar Schools, Mechanics' titution*, &c. The population, in 1861, was 10,554 against 10,553 1851. There is a al, twelve miles long, nmunicating with the amber; the little river id is studded with nufactories, and corn d bone mills, houses tanners, curriers, ltsters, brewers, &c. A rich Cistercian ab- formerly stood near uth Park, a few frag- ments of which still remain.

Leaving Louth, at the distance of about five miles we reach

LUDBOROUGH STATION. The village is small and pleasantly situated: the church has a nave with aisles, a chancel, and a tower, and contains three orna



LOUTH CHURCH.
(From the lithograph published by Messrs. Jackson.)

nted stone stalls. The Manor House is very ancient, but it is now dernised.

Two miles from Ludborough is NORTH THORESBY STATION.

In a field near the church, called the *Bound Croft*, is a blue stone, r which the manor court was formerly held.

On the eastern side of the parish are a number of *Blow Wells*, containing delicious spring water, like those at Grimsby and Tetney. Two miles hence is

HOLTON LE CLAY STATION, five miles south of Grimsby, and the last Station before reaching the latter place is

WALTHAM. The village is neatly built, and has a pleasant appearance. In 1832 this parish was added, with several others, to the parliamentary borough of Grimsby. The church, dedicated to All Saints, is a spacious Gothic building, and contains a large black marble monument, on which are the effigies of Johanna Waltham, who died in 1420, and her son and daughter. The rectory is an important mansion in the Elizabethan style.

Leaving this village we are speedily made aware of our proximity to *Great Grimsby*, by observing the various indications of commercial activity which the neighbourhood presents. The situation of this ancient borough, market town, and seaport, on the southern shore, and near the mouth of the broad estuary of the Humber, gives it an importance which the energy and enterprise of capitalists are endeavouring to augment. It is 16 miles south-east of Hull, and 35 miles north-east by north of Lincoln. The port has, in front of it, a deep and extensive roadstead, with excellent anchorage in blue clay. It is protected from the storms of the German Ocean by the opposite promontory of Spurn Point. In this roadstead 1500 vessels may ride safely in all weathers.

The Docks, which are the great points of attraction at Great Grimsby, will naturally attract the earliest attention of the visitor.

In the reign of Edward III. the port was of such consequence as to supply eleven ships and 120 seamen for the siege of Calais. Trade afterwards declined, and its harbours, being neglected, at length became so choked with the mud deposits of the Humber, that only small vessels could reach the town. In this condition it remained until the latter part of the last century, when some of the principal landed proprietors of the neighbourhood raised a subscription for the improvement of the harbour. In 1796 an Act of Parliament was obtained, incorporating them under the title of "The Grimsby Haven Company."

The spacious Dock and the other works connected with the improvement of the haven were completed at the cost of about £70,000, and

opened in December, 1800; and during the succeeding twenty years, many large warehouses and granaries, and several corn, bone, and oil mills were built along the town side of the dock, which is now designated the *Old Dock*, and extends nearly a mile in length, having a floating surface of about 15 acres. This dock, being long and narrow, has the appearance of a broad canal, and is supplied with fresh water from a number of small rivulets flowing to it from the Wold Hills, across the intervening low lands.

The docks, designed with a special view to the accommodation of steam traffic, have been executed by the Manchester, Sheffield, and Lincolnshire Railway Company, whose terminus at Grimsby is 110¼ miles from Manchester, and 16¼ miles from Hull.

The Royal Dock is entered from the tidal basin, by two locks, constructed of solid masonry, and furnished with double sets of gates, for ebb and flood tides. These are worked by hydraulic machinery, and can be opened and closed with ease and rapidity. A tower, 230 feet high, is built between the lock gates, and serves to contain the accumulation for the hydraulic engines and cranes, and also as a landmark or lighthouse, which can be seen over Spurn Point, and at a considerable distance out at sea.

Grimsby is a port subordinate to that of Hull; coal, salt, and the produce of the countries bordering on the Baltic, constitute the principal articles of commerce.

The town, though narrow, extends about a mile and a half southward from the New Docks, and is bounded on the west, for nearly a mile, by the Old Dock. The main street, running nearly the whole length of the town, is called Victoria-street, in honour of the Queen's visit to Great Grimsby in 1854.

Since the opening of the New Dock, several new streets have been opened, and the town is now rapidly improving in size and appearance.

A handsome *Corn Exchange* and *Market Hall* has just been completed. The *Yarborough Hotel*, adjacent and near the Railway Station, was erected in 1851, at the expense of the Earl of Yarborough, and is a large and commodious establishment.

There were formerly several religious houses in Great Grimsby, and many ancient relics belonging to them are now deposited in the parish church of *St. James*. This is a spacious structure, with a tower in the

centre, nave, two aisles, a spacious transept, a small chapel, and the south porch. The nave is separated from the aisles by two rows of massive pillars, supporting six pointed arches on each side, above which are ranges of pointed recesses, which give the structure a light and

CORN EXCHANGE AND MARKET-HOUSE, GREAT GRIMSBY.
(*From a photograph by Mr. Skelton, jun.*)

beautiful appearance. The population of Grimsby in 1861 is calculated between 11,000 and 12,000, being an increase of about 3,000 as compared with 1851.

Dr. John Whitgift, Archbishop of Canterbury, was a native of Grimsby.

From Great Grimsby we take the Manchester and Sheffield

BRANCH LINE TO NEW HOLLAND AND HULL,

passing by the following Stations, GREAT COATES, STILLINGBOROUGH, HARBOROUGH, ULCEBY JUNCTION, THORNTON ABBEY (in which may be seen the remains of a priory, founded in the 12th century, and converted into a college by Henry VIII.), GOXHILL, BARTON-ON-HUMBER, NEW HOLLAND, and thence by ferry to HULL, distant 17 miles from *Great Grimsby*.

We now return by Boston to Peterborough, *leaving our description of Hull to the Companion Volume of this Guide.*

From Peterborough we pursue our route on the

MAIN LINE

of the Great Northern Railway to GRANTHAM.

Leaving Peterborough, one mile south-west of the station we perceive *Woodstone House*. Farther on is *Orton*, or *Overton Longeville*, a parish and rectory, and *Orton Hall*, the seat of the Earl of Aboyne, pleasantly situated amidst plantations of venerable trees. North-west of Orton Hall are *Thorp Hall*, and *Milton*, the seat of Earl Fitzwilliam, about three miles from Peterborough. It was erected in the reign of Queen Elizabeth, and was called *Abbey Milton*, from an abbey which was once situated there; several additions have been made to the original structure.

It was to Sir William Fitzwilliam (knighted by Henry VIII.) that Queen Elizabeth entrusted the care of Mary, Queen of Scots, while a prisoner at Fotheringay Castle, about fifteen miles from Peterborough; and to the immortal memory of Sir William, a picture of that unhappy princess and of her infant son, afterwards James I., is preserved in the hall, with the following inscription:—"This picture was given to William Fitzwilliam by Mary, Queen of Scotland, on the morning of her execution, for the humane treatment she had met with from him at Fotheringay, whereof he was governor."

At the demolition of Fotheringay Castle, by James I., on his accession to the English throne, a portion of the stained glass from the windows of the Great Hall was placed in Milton House, where it still remains.

William Fitzwilliam, the ancestor and founder of the present family, was alderman of Bread-street Ward, London, in 1506. Before his death he forgave all his debtors, and wrote in the erased accounts of each, "amore Dei remitto." Cardinal Wolsey was the chief means of the worthy alderman acquiring his fortune. After the fall of that great man, Mr. Fitzwilliam hospitably entertained him at his family seat at Milton. Henry VIII. was enraged at this, but afterwards, struck with the nobleness of the action, he *knighted Fitzwilliam*, and had him

sworn in a privy councillor, shaking him by the hand at the same time, and declaring with an oath, "such gratitude shall never want a master."

Four miles north-east from Milton is *Walcot Park*, and three miles from thence is *Burleigh House*, the seat of the Marquis of Exeter, which we have already described in our previous pages.

Passing *Fletton* and *Standground* on the right, and four miles further, *Whittlesea*, after which are the *Manor House*, *Grove House*, and *Mansion House*, we arrive at

TALLINGTON STATION, seven miles and a half from Peterborough. The village is situated about half a mile from the station, on the northern bank of the Welland, three miles from Market Deeping. One mile from Tallington is *Casewick Hall*, the seat of Sir John Trollope, M.P. It is a large and handsome mansion, surrounded by extensive pleasure-grounds. *Uffington Hall*, situated on the north bank of the Welland, is on the left, the property of the Earl of Lindsey, the lord of the manor. About half a mile west of Uffington is a farm-house, called *Newstead Priory*, on the site of a religious edifice, founded in 1230, by William de Albine, third Earl of Arundel.

Proceeding further on the right is *Shillingthorpe Hall*, surrounded by extensive pleasure-grounds, now occupied by Dr. G. Hill, as a private lunatic asylum.

Four miles and a quarter from Tallington, we reach ESSENDINE STATION. *The branch railway from this station to Stamford*, in connexion with the through trains of the Great Northern Line, to and from London and the North, was opened for traffic in November, 1856. This parish is situated in the county of Rutland, about four miles north-east of the town of Stamford; three miles south-west of which is *Tolthorpe Hall*, and, on the west, *Tickencote Hall*.

The Chapelry at Essendine is a small ancient structure, with some curious carvings in stone. It is in the Norman and early English styles. The Norman south door is much enriched, and is greatly admired.

Farther on is *Bourne*, so named from a stream of remarkably pure water, issuing from a spring, near which it is situated. This place is of considerable antiquity, and, from the frequent discovery of Roman remains, it would seem to have been of some importance. The Church *contains* several interesting monuments. William Cecil, Baron Burleigh,

was born here in 1521. The *Bull Inn* is said to have been built by him, and had in one of its rooms a panel, on which was a fine portrait of Queen Elizabeth. The *Red Hall*, near the town, surrounded by a moat on one side, and a morass on the other, has long been in possession of the Digby family.

Four miles from Essendine is *Stamford*, formerly *Steanforde*, which town we have already described in our account of the Syston and Peterborough railway.

Continuing our journey by train, we pass between Essendine and Little Bytham, a cutting known by the name of *Dane Hill*, in allusion to a wood on the right, where the vestiges of a Danish encampment may yet be traced. Through a country abounding with beautiful rural scenery, we reach

Little Bytham Station, three miles and a half from Essendine. The village is seated on the river Glen, in the county of Lincoln. The living is a rectory, with the vicarage of Carth-Bytham, three miles north-east of which stands *Grimsthorpe Castle*, the residence of Lord Willoughby d'Eresby. It is a magnificent structure, erected at various periods. The north front is the most unique part of the building, and stands majestically in the centre of a spacious park, sixteen miles in circumference. From this entrance is an avenue of noble trees, extending nearly a mile in length. On the south are the gardens and pleasure-grounds, and on the left a lawn slopes towards two beautiful lakes, which cover upwards of one hundred acres. Beyond these, the view is terminated by an eminence, crowned with a grove of splendid trees. The mansion contains many objects of interest, among others the coronation chairs of George IV. and Queen Victoria. A branch railway, four miles long, constructed by Lord Willoughby d'Eresby at his own expense, from Little Bytham to Edenham, has been opened four years. At Edenham there is a station for passengers, goods, and coal.

Edenham contains a large and handsome church, in which are several fine monuments in memory of the Berties, ancestors of Lord Willoughby, and formerly Dukes of Ancaster and Earls of Lindsey. One is in memory of Robert Bertie, Earl of Lindsey, who fell in the cause of Charles I. at the Battle of Edgehill.

Within two miles to the right, or east of Little Bytham, is Witham-

on-the-Hill, and about the same distance on the other side is Holywell House.

The whole country round abounds with the most delightful alternations of wood and lawn, hill and dale, &c.

About a mile from Grimsthorpe Castle stood a Cistercian Abbey, founded by William, Earl of Albemarle, called *Vallis Dei*, now corrupted into Vaudy. The ruins of the abbey are scanty, but they give some idea of its former beauty.

The line passes over a long viaduct, 120 yards in length, and soon reaches CORBY STATION, five miles from Little Bytham. The town is pleasantly situated on the river Glen, about a mile and a half from the Station. It has two annual fairs for cattle. There is a vicarage here annexed to the rectory of Irnham.

Irnham Hall is about a mile further to the right of the Station.

HOUSE IN WHICH SIR ISAAC NEWTON WAS BORN, WOOLSTHORPE.

On the left of the line are *Buckminster Park*, the seat of the Earl of *Dysart; Easton House*, and *Stoke Rochford;* the latter a large stone

ng, in the Elizabethan style, but of modern erection, in the midst
nsive grounds.
ond Stoke Rochford is an obelisk in memory of Sir Isaac Newton,
as born in the neighbouring township of *Woolsthorpe*, and who
ed the first elements of his education at Stoke Rochford School,
he was sent to the Grammar School at Grantham. The manor
of Woolsthorpe, an ancient building, now occupied by a farmer,
he birthplace of this most renowned of British philosophers. In
ilding are preserved his oaken study, his sun-dials, and a chair
of the apple tree (which fell in 1835) which led him to discover
eory of gravitation.
miles from Corby we reach
AT PONTON STATION. The village (the *Ad Pontem* of Antoninus)
ated about a mile from the Station, in the county of Lincoln.
Earl of Dysart is lord of the manor. In this place, and in the
diate vicinity, Roman coins, arched vaults, tesselated pavements,
, &c., have been discovered at different periods. The church has
r and spire, much admired for architectural beauty, said to have
rected in 1519, at the expense of Anthony Ellys, Esq., who sent
fe from abroad a cask inscribed "Calais sand," which was stowed
in the cellar as unworthy of examination, until the husband
d and found it safe, when he told her it contained the bulk of his
; and, being childless, the money was devoted to building this
. Such is the tradition left by time, and we should be sorry to
it.
two miles south is *Stoke Hall*, the seat of C. Turner, Esq., a
splendid mansion in the Elizabethan style of architecture.
and grounds attached to the house are extensive. A mile
from hence is *Easton Hall*, the seat of Sir M. J. Cholmeley.
ile and a half north is *Little Ponton Hall*, the residence of
e, Esq.; three miles east is *Boothley Hall*, the seat of J. Litch-
Esq.
ee miles and a quarter from Great Ponton we reach
ANTHAM STATION. The town is of ancient origin, and many
exist of its importance as a Roman Station. The elegant cross,
d by Edward I. in 1290, is destroyed, but there are several
arian remains which will *gratify the visitor*. *The Angel Inn*,

which formerly belonged to the Knights Templars, still bears marks of its original richness of decoration, having a number of cherubs and other allegorical figures inserted in the building. "It is supposed to have been a hostelry, where royal and other travellers were entertained. The front of this ancient house is greatly admired. The parapet is very beautiful. The gateway arch is older than the rest of the elevation; the heads on either side of the arch are those of Edward III. and Queen Philippa. Inside, the roofs of the recessed windows are elegantly groined. The central boss of one represents the pelican and her young. King John held his court in this house, Feb. 23, 1213; King Richard III. on Oct. 19, 1483. Charles I., in all probability, received here the

THE ANGEL HOTEL.

homage of the alderman of Grantham, Henry Ferman, May 17, 1633." Other inducements for the traveller to go direct to *this* Hotel will be found in the *facts* that the host, Mr. Boyall, studies in every possible manner the comfort of his guests, and that all the necessary means are *at his* disposal. This *model* Hotel, we should add, is warmed throughout

by costly apparatus, recently erected, and a large Billiard Room has just been opened.

Mr. Boyall adds to his qualifications as host the reputation of being a *first-class* CARRIAGE BUILDER, and from his *atéliers* some of the best carriages in the kingdom are produced here. The posting and carriage department of the Angel Hotel is especially to be commended. Tourists will find here commodious carriages of every description in which they can visit the famous Belvoir Castle, Harlaxton Manor House, and other places of interest in the neighbourhood. Those who enjoy *good* wine (generally a rarity even at hotels which are styled *first-class*) will find it at "the Angel" of the purest and best character. The house has recently undergone extensive alterations and improvements.

ST. WOLFRAN'S CHURCH, GRANTHAM.

Near Grantham, Oliver Cromwell defeated the royal forces.

The church is a beautiful stone structure of the thirteenth century, surmounted by an elegant crocketed spire of eight sides, 273 feet high. The Rev. Mr. Street, in his interesting

"Historical Notes on Grantham," observes of the spire, "this marvellous structure rests on four massive clustered piers, two of which stand detached, right and left, within the western door." A bell is rung at five o'clock in the morning from Lady-day to Michaelmas, and the *curfew* every evening at eight o'clock, except on vigils or eves of holy days. The tower communicates with the nave and aisles by three finely-pointed arches, and the interior displays much variety in the piers and arches which support the roof; the chancel has a range of small clerestory windows, and a stone screen of exquisite design; under the eastern part of the church is a crypt. There are numerous monuments, several of great beauty. The font is of remarkable workmanship.

The places of public worship in Grantham, besides the Parish Church, are *St. John's*, Spittlegate; *Calvinist Chapel*, Castlegate; *Independent Chapel*, Chapel-street; *Primitive Methodist Chapel*, Spittlegate; *Roman Catholic Chapel*, Little Conerley; *Wesleyan Chapel*, Finkin-street; *Wesleyan Reform Chapel*, Swinegate; *Baptist Meeting Room*, Exchange Hall; *United Free Methodists' Room*, Corn Exchange; *Particular Baptist Chapel*, St. Peter's Hill. Grantham is one of the most agreeable and well-governed towns, for its size, in the kingdom, and is much improved, of late years, in its appearance. The public buildings are not numerous, but they are convenient, and, in some respects, of pleasing architecture. In Spittlegate a new Police Station has recently been erected. A drinking fountain was attached in 1860 to the old conduit in the Market-place, by the Corporation.

The Schools at Grantham are numerous. In the Free Grammar School, founded in 1528, Sir Isaac Newton was educated. While here, young Newton is said to have been inattentive to his lessons at school, but "a sober, silent, and thinking lad," and often spent his half holidays in knocking and hammering in his bed-room. He quitted Grantham for Cambridge in 1660 or 1661. This event in his life cannot be better narrated than in the words of Sir David Brewster: "The day on which he left Grantham was one of much interest, not only to himself, but to his schoolfellows and his venerable teacher," who "made a speech in praise of his character and talents, and held him up to the scholars as a proper object of their love and admiration."

On the 21st of September, 1858, a noble bronze statue was erected on St. Peter's Hill, to the memory of this great and good man.

GRAMMAR SCHOOL, GRANTHAM.

The Prison stands at the back of the Town Hall. The Guildhall, erected in 1787, is a handsome building, and contains spacious Assembly Rooms. There is a most commodious new Corn Exchange in High-street.

Grantham was the native place of Bishop Fox, founder of the Grammar School, and of Dr. John Still, Bishop of Bath and Wells in the reign of Elizabeth, author of "Gammer Gurton's Needle," the earliest comedy extant in the English language.

Grantham is pleasantly situated on the river Witham, near the vale of Belvoir. It is noted, not only for its trade in malt, but for the manufacture of Grantham cakes, a delicacy in universal esteem. Within three miles' distance is *Belton House*, the residence of Earl Brownlow, a large pile, shaped like an H, built in 1689, from a design by Sir Christopher Wren. The interior contains some fine wood

carvings by Gibbons, and a collection of valuable paintings. The present earl possesses the collection originally formed by Sir Abraham Hume, and afterwards the property of Lord Alford.

Beyond Belton is *Syston Park*, the seat of Sir J. C. Thorold, Bart., with its picturesque village. Three miles west from Grantham is *Harlaxton Hall*, the large and splendid mansion of the Gregorys, built of Ancaster stone, and seated amidst pleasure-grounds remarkable for their beauty and variety. The apartments contain many valuable paintings and works of art. The village contains several tasteful cottages. Beyond Harlaxton is *Denton Hall*, a handsome stone mansion, the residence of Sir G. E. Welby, Bart., standing on a fine elevation, surrounded by woods and plantations. The chief object of curiosity in the neighbourhood of Grantham is *Belvoir Castle*, the magnificent seat of the Duke of Rutland, situated five miles west of the Railway Station. The original foundation was a fortress, erected soon after the Conquest. The present structure is a modern castellated pile on an eminence, at the foot of which the stables and offices are erected. The east front is 252 feet in length. The Great Hall is 127 feet long, and is filled with the choicest productions of art. Attached to the castle are several extensive manors, granted to this princely family by Henry VIII. The romantic vale of

STATUE OF SIR ISAAC NEWTON, GRANTHAM.

Belvoir extends, from within a mile of Grantham, into three counties; viz., Lincoln, Leicester, and Nottingham.

The noble castle rises magnificently from terraces and gardens, below which are deeply-shaded plantations. In point of situation there is not, perhaps, another residence in England that can compare with Belvoir. "From hence," observes Dr. Waagen, "the view falls on various eminences outspread in beautiful soft forms, and adorned with the most luxuriant trees of the freshest green, and then ranges free over an expanse of fertile plains till it is lost in the horizon."

The castle contains a valuable collection of paintings by the first masters of the Flemish and Dutch schools, besides others of eminent merit.

THE COMMERCIAL ASPECT OF GRANTHAM.

The principal local trade of this town is that of malting and exporting corn, the produce of the surrounding agricultural district. Owing to the railway and canal communications, there are facilities for traffic which are developing themselves from year to year. The Grantham canal, from this town to the river Trent, which it joins nearly opposite the mouth of the Nottingham canal, is 33 miles in length, with a fall of 147 feet.

The Agricultural Implement Manufactory of Messrs. Richard Hornsby and Sons.

In Spittlegate are the famous works of Messrs. Hornsby and Sons, whose enterprise as engineers and agricultural machinists has of late years contributed very much towards making the town of Grantham well known in this country, and also far beyond its limits. The works were founded by the present head of the firm, R. Hornsby, sen., Esq., who settled in Grantham when but a young man, and who possessed those sterling qualities that soon placed him in advance of his competitors. Mr. Hornsby takes rank amongst that successful class of men of whom it is frequently said that they are the architects of their own fortunes, but what is of much more consequence in a community constituted as this is, he has been a benefactor to the town in which he resides, and to the nation of which he is a citizen. The agricultural

implement manufactory founded by Mr. Hornsby, sen., forty-eight years ago, has gradually expanded, till it takes rank, in point of extent, second to no similar establishment in the kingdom. There are at present ten acres of land under the buildings and timber yards; while above 500 skilled workmen and apprentices are daily employed fashioning those beautiful engines and implements of husbandry for the manufacture of which this firm has become celebrated.

Messrs. R. Hornsby and Sons have a large foreign connexion, and at the present time are executing considerable orders for India, Russia, and Australia. Their business engagements extend to the entire of our Australian colonies, where their agricultural machinery is largely used; also to New Zealand, the Cape Colony and Natal, South America, the West India Islands, and the British possessions in India. In Europe they do more, especially with Russia, France, the Austrian empire (including Hungary, where their implements and machinery have come into general use); while their name has almost grown to be a "household word" among the agriculturists of Great Britain and Ireland. Before specifying more particularly those machines and implements for which they are so justly celebrated, we will endeavour to give a description of the Spittlegate Works. The main buildings stand north and south, on the left coming from the Railway Station, from which they are distant about a quarter of a mile.

The Offices are approached by the archway entrance into the main building. They are on the north and south sides.

Turnery.—Leaving the open yard, and keeping to the north, entrance is had into a capacious turnery, on the ground-floor, embracing every class of tools and lathes used in manufactures of this sort, in addition to slotting, shaping, planing, screwing, and drilling machines in almost infinite variety and power. Above this workshop, which is used for the heavier classes of machinery, is the Top-turnery on the second floor, fitted up with every requisite for sending out the lighter descriptions of machinery with despatch and in a perfect state. The fixed machines in this and the adjoining workshops are driven by a very powerful portable steam-engine.

Fitting Shop.—Passing out of the lower turnery, entrance is had to the fitting shop, to which it is contiguous. This is an excellent apartment, well ventilated and lighted, and capable of accommodating *a large number of men.*

THE AGRICULTURAL IMPLEMENT MANUFACTORY OF MESSRS. RUSTON, PROCTOR AND CO.

THE ERECTING SHOP adjoins the fitting shop, and is wholly set apart for the purpose of erecting steam-engines, in the manufacture of which Messrs. R. Hornsby and Sons have a high reputation.

STORES.—Running parallel with the erecting shop, and having a frontage to the Great North Road, are the store-rooms, comprising upper and lower floors, fitted with the most complete arrangement of racks, shelves, &c., and containing every conceivable portion of the implements and machinery to be found on the ground.

COMBINED MACHINE SHOP.—Leaving the stores the visitor is conducted across an open yard, 250 feet long and 30 feet wide, where the various parts of steam-engines and other machines necessary to be tested, are at present subjected to the most careful testing process, before being forwarded to the finishing shop, situate on the other side of the way. Entrance is had from this yard to a spacious and well-ventilated shop, set apart for the manufacture of combined thrashing machines, corn drills, &c., in which a large business is done by the firm. This workshop is 175 feet long by 43 feet wide, and is lighted from the top and sides. It has an open roof. A portion of it is floored above, and devoted to the same branch.

THE SMITHY.—This was designed under the supervision of the Messrs. Hornsby, and no expense has been spared in working out the details, to make it, when finished, one of the finest workshops of its class in England. It is (including the present smithy) 384 feet long by 43 feet wide, and is to contain above sixty fires. The new smithy is for the manufacture of ploughs. The plough irons are forged below, and by means of a tackle lifted to the second floor, or fitting shop, which is a large airy apartment, upwards of 200 feet long by 43 feet wide, having a clear space between the floors of 12 feet 6 inches. From this shop the ploughs, when finished, are elevated to the third story, or store-room, which is designed to store upwards of 2,000 ploughs. During the season, from 1,000 to 2,000 ploughs are delivered per month. In the centre of the smithy is an elliptic arch, having a span of 23 feet, and forming the connexion between the old and new portions.

Adjacent to the smithy, an extensive store for bar and plate iron is erected.

THE FOUNDRY.—Leaving the range of buildings, we are conducted *across the street* to a second combination of workshops and yards used

in the operations of Messrs. Hornsby's business. The foundry is 80 feet long by 33 feet wide, and fitted up with core ovens and cranes complete. The cranes are capable of lifting from four to ten tons weight. There are three cupolas, capable of melting ten tons of metal at the same time. These are worked by one of Lloyd's patent noiseless fans, driven by a portable steam-engine. Adjoining the iron foundry there is a convenient brass foundry. This section of the works is well lighted and ventilated.

Pattern Shop.—Accessible from the foundry is an extensive store-room for the almost infinite variety of models employed in the manufactory.

Combined Trying Shop.—Leaving the foundry, we next visit the apartment used for trying combined and other machines. It is 68 feet long by 37 feet 6 inches wide. The machines are tested by means of a line of shafting extending across the shop, and worked by the portable engine attached to the noiseless fan.

Paint Shop.—This workshop is contiguous to the combined trying shop, and is 63 feet 6 inches long by 37 feet 6 inches wide.

Other Workshops.—Above the foundry and the workshops are another set of apartments, occupied by skilled artisans. In one, corn drills, dressing and thrashing machines are constructed by artificers in wood; in another, wheelwrights are busily engaged in making wheels, from well-seasoned oak spokes; and in a third, the models for castings are carefully fashioned.

Grinding Mill, &c.—Opposite the foundry is the grinding mill, in which are erected several powerful stones and glaziers, for the purpose of grinding and glazing the various parts of the ploughs, particularly the mould boards.

Saw Mill.—This mill is fitted up with circular and upright saws, worked by a portable steam-engine. Adjoining the saw mill are a number of sheds used for the storage of timber, and at the rear is a store room for implements. There is also a coke yard, and other conveniences requisite in so extensive a business.

Timber Yards.—There are four timber yards, well filled with seasoned and seasoning oak, oak spokes and scantling, and pine and elm boards, and ash and other scantlings; and at the present time there cannot be less than about £10,000 worth of timber in stock.

Messrs. R. Hornsby and Sons chiefly manufacture portable and fixed steam-engines; combined thrashing, shaking, finishing, and dressing machines, both portable and fixed, for steam or water power; and every variety of corn, seed, and manure drills, corn dressing machines, ploughs, cultivators, chaff cutters, cake breakers, corn grinding mills, saw tables, land rollers, with other implements. Of these, the portable engines took the first place at the last trial of the Royal Agricultural Society; and on the same occasion their combined thrashing, shaking, and dressing machine, worked by their portable steam-engine, gained the highest award for combined machinery the Royal Society offered. Their corn dressing machine and corn and seed drill for general purposes, were also awarded first places at the Royal Society's last trial of implements.

The agricultural world already know the result of other competitions and tests to which the Messrs. Hornsby have subjected their "Champion Plough." These ploughs are now well known, and have taken their proper place among improved implements of husbandry, and it will rest with those who have already shown so much intelligence, combined with persevering business capacity, to keep them in the first rank which at present they are fairly entitled to occupy.

Having thus described the Spittlegate Iron Works, and enumerated some of the principal engines and machines manufactured there, we should not omit to mention that the head and founder of the firm, as well as his sons, live in houses built in connexion with this immense establishment, which their intelligence has reared. They are on the spot, ever identified, by pecuniary considerations and bodily presence, with the iron works around them; and while they are exact in all their dealings, they blend the strictness of the employer with the watchful solicitude of friends for those dependent on them.

The visitor to Grantham will find at the Printing and Bookselling Establishment of our agents, Messrs. S. Ridge and Son, High-street, a large collection of views of Grantham and its neighbourhood. Messrs. S. Ridge and Son are also the publishers of a very useful "Grantham Companion," the Rev. B. Street's "Historical Notes on Grantham," a work of considerable research and interest, and other excellent publications. Our readers will be able to obtain any information they may *require*, relative to Grantham and its neighbourhood, from Messrs. S. *Ridge and Son.*

ook, the first station on this branch, four miles west-north-
Grantham. The living is a rectory in the patronage of the
e village is small, but prettily situated.
g onward from Sedgebrook, we reach
RD STATION. The parish is partly in the northern, but
he eastern division of the wapentake of Manley, parts of
unty of Lincoln. The vicarage is in the patronage of the
Chapter of that diocese. Soon after leaving Bottesford, we

VATION. The parish is in the county of Nottingham, and is
tent. The country around is richly cultivated, and presents
spect. The next station on this branch line is
ON. This parish is remarkable as the birthplace of Arch-
mer, who was burnt at Oxford in 1555. A short distance
llage, we reach
t, the principal station on the line before reaching Notting-
town, which, previously to the Conquest, was possessed by
chieftains, appears to have been anciently more extensive
t present. It had a college or guild, founded in honour of
Bingham is pleasantly situated in the fertile vale of Belvoir,
ts principally of two parallel streets. The houses, though
built, are neat. The church is an ancient, cruciform struc-
king of the early and decorated styles of English architecture,

rectors of this parish, from which they were promoted to their respectiv sees in the seventeenth century.

The Roman Foss-way, in its course through the parish, passes by large mound, called *Castle Hill*, the site of the ancient fortress.

Passing RATCLIFFE STATION, the train speedily arrives at Nottingham the time occupied in traversing the branch line hence from Grantha being usually about one hour.

The capital town of Notts was called by the Saxons *Snottinga ha* or Place of Caverns, from the numerous subterranean dwellings exc vated in the sandy rock on which it is situated. William the Conquer built a castle at Nottingham. In the reign of Stephen, the town w the scene of hostilities between that Prince and Henry of Anjo Several parliaments were held here. In 1485 Richard the Third marche from Nottingham, where he had assembled his forces, for the battle Bosworth Field. In 1642 Charles the First set up his standard Nottingham. The population is 75,756.

The various public buildings are distributed pretty fairly about th town. The most striking feature of Nottingham, however, is th

MARKET-PLACE, NOTTINGHAM.

Market-place, which is the finest and most spacious in the kingdo *It is of a triangular* form, and occupies an open area of nearly six ac *in extent. Being* surrounded by lofty buildings and arcaded shops,

ltogether without parallel in this country. The market-

THE BLIND ASYLUM, NOTTINGHAM.
(From a photograph by Woodward.)

nesday and Saturday, the latter being the principal one.

NOTTINGHAM CASTLE.
(From a photograph by Woodward.)

change is a prominent building on the east side of the

market-place. It is a handsome brick building. Next to the market-place, the *Castle* will be the chief object of the visitor's attention. Standing on the south side of the town, on the summit of a steep and precipitous rock, 133 feet above the level of the adjacent meadows, this ancient fortress commands a most extensive prospect of the surrounding country, comprising the park, the river Trent, Wilford and Clifton grove, Wollaton Hall, the sloping hills of Derby and Leicester, and even the distant towers of Belvoir Castle.

NOTTINGHAM CASTLE.

The visitor to the Castle will be disappointed in his expectation of seeing a fine old time-worn structure. The truth is, that the Nottingham Castle of our age is not the one made memorable to us in the days of the Edwards and Henry. Originally founded by William the Conqueror, the fortress was dismantled by Oliver Cromwell; soon after the Restoration it became the property of the Duke of Newcastle, but being so far demolished as to be unserviceable, he caused large portions of it to be pulled down, and the present castle to be built upon its site, which was completed in 1679.

The Castle was set on fire by rioters in 1831, consequent upon the rejection of the Reform Bill, when it was so far destroyed as to be left a mere roofless shell. Some portions of the ancient castle still remain.

Within the Castle Hill there are caves or hollows of a curious kind. The passages are very tortuous, and have light thrown in upon them through loop-holes cut in the face of the rock. Along the sides of the passages are several hemispherical cavities, said by some to have been depositories for cannon balls—a reserve store of ammunition for the defence of the Castle in times of danger.

Nottingham has many important buildings. *St. Mary's Church* is the principal ecclesiastical edifice. It is a handsome, massive structure, with a square tower, and dates from the period of Richard III. There

NOTTINGHAM CASTLE, FROM THE PARK.

are several other churches, and numerous Dissenting chapels. Situated on the Derby road is a new cathedral edifice belonging to the Roman Catholics.

The *General Lunatic Asylum* will accommodate three hundred patients. There are no less than seventeen hospitals in Nottingham, the principal one being the *General Hospital* on Standard-hill. There are also a *Female House of Refuge*, a *Girls' Industrial and Training School*, a *Free Grammar School*, a *Midland Institution for the Blind*, a *Mechanics' Institution*, several large Libraries, &c. The *Arboretum* is a delightful place of recreation, situated on two sloping hills. Opposite to this spot is the *General Cemetery*, consisting of eighteen acres of land. The *Park* is on the west side of the town, and belongs to the Duke of Newcastle; it comprises an area of 120 acres, and is adorned with numerous handsome mansions. The river Trent passes about a mile south of the town, and is there crossed by the noted Trent Bridge of 17 arches, built in 1683.

CAVES AT NOTTINGHAM.

The neighbourhood of Nottingham abounds in places of inter

NEWSTEAD ABBEY, NEAR NOTTINGHAM.
(*From a photograph by Woodward.*)

nt to prolong the stay of the excursionist, and to gratify the anti-
n and the lover of fine natural scenery.

northern road from Nottingham, passing by the race-course, is
by the private
nces of some of
ealthier inhabit-
and leads on-
about nine miles
Newstead Abbey.
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WOLLATON HALL, NEAR NOTTINGHAM (NORTH ENTRANCE).

Two miles westward from Nottingham is *Wollaton Hall*, the most beautiful old English mansions now remaining. The erection is known to have been somewhere about 1580. The forms a square mass with a square tower at each corner, rising ve the general roof of the building; but the most distinguishing is a large and central tower, rising still higher than those at the and turreted at the angles. Every front of the main building, very side of every tower, is richly decorated, so as to present a whole.

WOLLATON HOUSE, NEAR NOTTINGHAM. (*From a photograph by Wo*

WOLLATON HOUSE, NEAR NOTTINGHAM (GARDEN ENTRANCE).

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COMMERCIAL ASPECT OF NOTTINGHAM.

The principal manufactures carried on at Nottingham are those of lace and of cotton silk hosiery. The introduction of the manufacture of plat-nets in imitation of foreign grounds, ornamented by the application of the new jacquard apparatus, imparted fresh stimulus to the lace trade. A considerable change has, of late years, taken place in the mode of conducting the staple manufactures of the town. Our notices of the principal commercial houses in Nottingham will include various arts which have been practised for some considerable time with great prosperity.

Among the other branches of industry prosecuted at Nottingham are dyeing, wire-drawing, pin-making, iron and brass-founding, malting, lace-dressing, and tanning. As illustrations of the commercial importance of Nottingham, we may mention the firm of

THE CAXTON HOUSE PRINTING, BOOKSELLING, AND STATIONERY ESTABLISHMENT OF MR. R. ALLEN.

While noticing the leading commercial establish-

Nottingham, *we would draw the visitor's attention* to the

shop and premises of Mr. R. Allen, Long-row, conspicuous among the buildings in this town for their substantial and attractive appearance. This business, which comprises the departments of printing, bookselling, and stationery, dates from 1824, but has been considerably improved and extended since 1830, when the present worthy and energetic proprietor became the possessor. In 1860 Mr. R. Allen purchased and partially built the commodious premises under notice, and where we hope he may long enjoy the prosperity his industry merits. On referring to the annexed engraving, in the upper compartment will be seen the elevation of what has been appropriately named "CAXTON HOUSE." It is situate in the centre of the Long-row, which forms the north side of the capacious Market-place. In the lower part of this building, and extending upwards of 60 feet, is the RETAIL DEPARTMENT, containing not only a well-selected stock of books, music, and mercantile stationery, but a varied assortment of FANCY STATIONERY, consisting, among other articles, of mediæval, leather, and papier-maché goods, cabinet ware, filigree work, and all the novelties as they appear from the Parisian and German markets. The upper part of this building is occupied as chambers by merchants and professional men. Passing through the retail department, and immediately adjoining, is the WHOLESALE AND MANUFACTURING PART OF THE PREMISES, which are illustrated in the lower compartment of our engraving. Having a frontage to Rigley's-yard, the lower part is appropriated to retail shops, whilst the upper is occupied by the various printing and manufacturing works, which we have only been able partially to illustrate, owing to our limited space. We may notice, however, the facilities for PRINTING; in this department, three machines are worked by a beautiful steam-engine, manufactured purposely by Hughes, which, with a conical boiler of 6-horse power, is a most ingenious contrivance, and would be invaluable where space is an object. There are, also, five Albion and Columbian presses, a compact stereotyping foundry, and the usual large and varied assortment of type for an office of this description; these latter, with a goodly row of LITHOGRAPHIC and COPPERPLATE machines for that branch of the business, and hydraulics for pressing, occupy one floor. The MANUFACTURE of ACCOUNT BOOKS and STATIONERY, MACHINE-RULING, BOOKBINDING, &c., occupy another portion of the premises, in which are an almost

CAXTON HOUSE
ALLEN'S
ACCOUNT BOOK
MANUFACTORY
ALLEN'S
STEAM
PRINTING
ENGRAVING
LITHOGRAPHIC
AND
BOOK BINDING
OFFICE
1824

endless variety of machines for blocking, paging, perforating, cutting, &c. &c. Adjoining these rooms are the WAREHOUSES, PACKING ROOMS, &c., which occupy three floors, and are well arranged for the purpose. On the whole, we have rarely seen an establishment of this character in which there is so great a variety of business, and where everything is so well arranged, and, we may add, where the comforts of the workpeople, as well as the conveniences of business, have been so much studied. We strongly urge those of our readers who are interested in the working details of a Printing, Bookbinding, and Manufacturing Stationery business, to visit CAXTON HOUSE, and its busy and interesting adjunct, Caxton Buildings, where they will meet with the most courteous reception from Mr. Allen or his son, by whom he is assisted in the management of the businesses. Mr. Allen is the printer and publisher of a number of works, amongst which we may notice an excellent "Great Midland Almanack," which, as the title states, is a complete "Cyclopædia of Useful Information."

MESSRS. ADAMS AND CO., LACE MANUFACTURERS.

These premises, which were completed in 1855, present a noble front facing Stoney-street, 145 feet wide and five stories high, the centre part being six stories, and extending to the depth of 144 feet into St. Mary's Gate. The basement and ground story fronts are faced with Ancaster and Matlock stone, the remainder with red dressed bricks, with stone window-dressings, quoins, &c., to the centre and wings. The whole of the walls are built with perforated bricks, for the manufacture of which there are extensive works at Nottingham. In the brick fronts, the window reveals are worked with moulded bricks, and the sashes are of cast iron. The stone windows are rebated for the glass.

A visit to this model of a Nottingham warehouse enables us to afford our readers some information of its internal arrangements, which may be classed amongst the most convenient and judicious in the kingdom. A most ready and courteous permission is always granted to view the premises; and an intelligent conductor will unravel with great patience all that may appear mysterious to the uninitiated beholder.

Ascending a flight of steps, we find ourselves in the principal entrance, communicating in a direct line with the corridor. Passing by a counting-house and through the Sale-room, which is remarkably handsome, we

THE PREMISES OF MESSRS. ADAMS AND CO., LACE MANUFACTURERS.

descend to the basement, entering the chapel recently built by the energetic firm for their numerous workpeople, capable of containing 400 persons, and furnished with appropriate sittings, desk, vestry, &c., together with an excellent organ, the joint offering of the employed. In this sacred edifice, where the poorest operative stands on an equality before his Maker with his superior officers in the establishment, there is a daily morning service at eight o'clock, the prayers in use being a selection from the comforting Liturgy of the Church. Attendance is strictly enforced with regard to the apprentices, but it is optional with the other workpeople.

Messrs Lambert, Brothers, Lace Dressers.

Among the great commercial houses of this portion of the kingdom, we may rank in an eminent degree that of Messrs. Lambert, Brothers. The premises (which for extent and adaptability may be considered models of their kind) are situated in Talbot-street, in the parish of St. Mary; a large tower, 120 feet high (represented in our engraving), indicating the position of the works, and forming a prominent object for some miles round the country. There is also a chimney about 100 feet in height. The buildings were erected a few years since at a great cost, and are, architecturally speaking, of commanding appearance, even in this town of commercial palaces.

The most important department of the premises are the Lace Dressing Rooms, of which there are four, each averaging in length 302 feet by 76 feet; and in order that the visitor may be prepared for the curious and interesting processes which he will see carried on here, we may remark that the iron frames used are upwards of 1,100 yards in extent, and the steam piping, of four inches diameter, for heating purposes, may be measured by miles. Two immense boilers supply the steam for *this purpose alone*, while a third with its engine pumps water, works the dipping and centrifugal machines, hoists, &c. &c.

From end to end of these vast rooms extend iron frames, which are capable of adjustment to any width. On these frames the lace is stretched, and the different solutions applied to give the required colour and stiffness; and how much care is necessary in this process may be gathered from the fact that a silk piece, weighing only 2¼ lbs., actually produced, when finished, 672 square yards of lace.

THE FACADES OF MESSRS. LAMBERT, BROTHERS, LACE DRESSERS.

We cannot, in this necessarily short notice, describe the various modes by which the different kinds of lace receive the beautiful finish we see in the wholesale warehouses; but we may state that this well-arranged establishment is divided into four departments, each having its own set of hands, who are limited to a particular sort of lace, the advantage of this arrangement being, that continual practice in any one branch is more likely to result in perfection than would be the case by incessant change from one variety to another.

It may serve to give the ignorant in these matters some idea of the vastness and importance of the lace trade, and also of the facilities afforded by an establishment of this magnitude, when we inform them that, in *a single week*, 170,000 *square yards of lace were dressed in* ONE DEPARTMENT ALONE.

The Dye Houses are in every respect equally well arranged, and among the most interesting features of this departmt are the Centrifugal Machines, which cannot fail to delight the stranger. Into these machines (invented and patented by Messrs. Manlove and Alliott, of Nottingham) the lace, wet from the vats, is placed; the engine connected with them being set in motion, they revolve at an incredible speed, throwing off almost every particle of moisture, and this, too, without the lace being disturbed in the slightest degree. The value of such an invention, to so delicate a fabric as Mechlin lace and other light descriptions, cannot be overrated.

If the fair ladies who wear veils, scarfs, collars, edgings, quillings, &c. &c, of British lace, could know the vast amount of inventive skill, of complicated machinery, and of patient endurance involved in the production of these articles, they would see how largely the well-being of tens of thousands depends upon the fluctuations of fashion, and would perhaps marvel how such fabrics could be sold at such a price as the modern market indicates. Almost every month presents some new adaptation of mechanism, some new order of processes, by which a pattern is produced that could before only result from the needle of the embroiderer. In some cases the imitation is so exact, that a rigid examination is necessary to determine the mode of production.

In passing through these extensive works the stranger will remark, with pleasure, the healthy condition of the workpeople (upwards of

three hundred). This is due, in a great measure, to the considerate attention shown by the proprietors to the operatives, who, amongst other advantages conferred upon them, have had a large and comfortable *refectory* arranged for their use.

The junior partner of this firm is the present Sheriff of Nottingham, and both of the Messrs. Lambert are owners of choice collections of pictures.

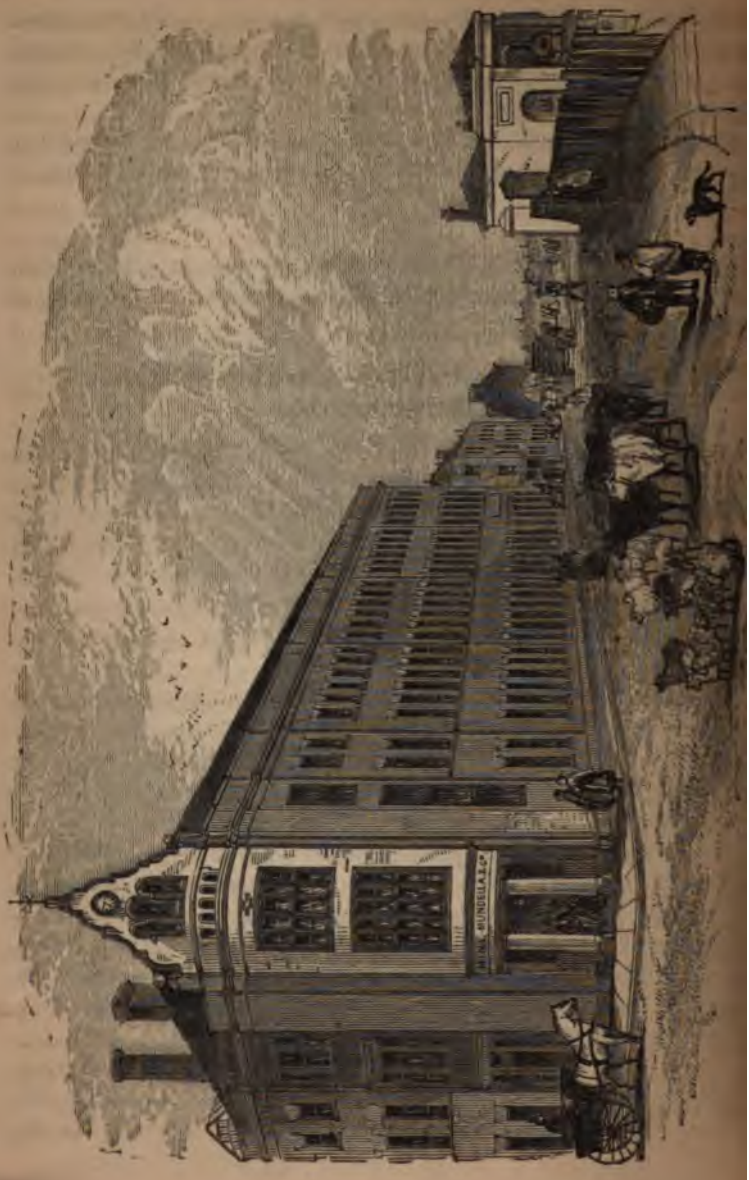
We will, in a few words, hint at what may be seen in a *Hosiery* warehouse. The visitor to Nottingham will see, immediately on leaving the station,

THE MANUFACTURING HOSIERY ESTABLISHMENT OF MESSRS. HINE, MUNDELLA, & Co.

We cannot attempt a description of the numberless articles manufactured there, but will at once introduce our readers into a place of business which sends its comfortable and tasteful productions not only to all parts of the country, but also to all quarters of the globe. Some idea may be formed of the transactions of this firm, when we state that not only is this vast building occupied by a host of workpeople, but numerous families of the town and adjoining villages are supported by the labour it provides.

In regard to the excellence and the cheapness of the goods made by this establishment, we may state that, of 180 competitors, from all parts of the world, at the Paris Exhibition of 1854, the proprietors had a gold medal awarded to them, in acknowledgment of the great superiority of their productions.

This building was the first of the new style of warehouses that Mr. T. C. Hine, the architect before mentioned, has so successfully adopted in Nottingham. It was built in 1851, destroyed by fire 1857, re-erected 1859, and combines the same efficient arrangements for carrying on the business in its various departments, with every appliance to insure the comfort of the workpeople, as we have remarked in our notice of the establishment of Messrs. Adams and Co. The warehouses are lighted from the roofs as well as the sides, and have two or three tiers of broad galleries running round them, each fitted up with two rows of double counters. The Sale-room, which is 150 feet long, 40 feet wide, and 40



h, and the stock rooms, contain an immense quantity of manufac-goods, sufficient, we might think at first sight, for the requirements arter of the world, but this stock is a very small item of the aggre-uantity of goods annually sent from these warehouses to all parts world. The cellars for storing grey goods are more than 280 feet Facts like these bring to our memory the old Nottingham phrase, or as a stockinger," which had its application before the grand system of Arkwright, and those inventions and improvements in ery which have attained such wonderful perfection in our own Nottingham has the credit of being the place where this extraor-man commenced his operations, and where the whole produce of bines was for some time absorbed in hosiery.

e cutting-room, where we next proceed, will be seen the expedition hich articles in their earliest stage of preparation are produced by of machinery. Female labour is here engaged at its legitimate n, and the surprising skill and celerity which the workwomen ex-not the least curious part of this interesting manufactory. One in this department, will prepare a sufficient quantity of material employment of ten workers without.

nding higher in the building, we enter the machinery department, we find a good variety of machines, some for weaving, some for ng, and others for sewing, and we observe many processes which ly could only be performed by hand, now admirably executed by nery. Some idea of the work carried on here may be formed from t that *tons* of cotton per week are used for the manufacture of articles of wearing apparel, &c.

e must not omit to visit the under-shirt room, where we shall find men employed in sewing the button-holes to these comfortable nts, many of which are made of silk. The rest of the work is done chinery, which, like the good fairy in our children's books, does it taneously, and saves the labourer his toil, while it opens for him hannels for industry.

ides the rooms already mentioned, there are many others in which parts of the process of manufacturing are carried on, from the in which the machines are built, to the apartments in which the l classes of goods are got up and finished.

Mr. J. B. Whitehall, Jacquard Loom Maker and G Machinist, Goldsmith-street.

The enormous premises represented in the accompanying were erected in the year 1857, and are the property of Mr. J. hall. The building is of six stories, with, in addition, a larg factory in the roof. The ground-floor and basement are us proprietor for the purposes of his manufactory, while the wh other portions of the premises are, with the use of steam-po various large manufacturers. The jacquards made upon th occupied by Mr. Whitehall are perhaps the most delicate and of any machinery used for manufacturing purposes. The which cost Jacquard so much thought and anxiety is intende tate the weaving of figured patterns on cloth of any kind. several modifications of jacquard apparatus for looms and lace- and the combination of the jacquard apparatus to these ma added much to their capability of making intricate pattern we are told there is scarcely a design the artist can sketch wh be figured by means of the jacquard upon either ribbons, lac Here also are manufactured Winding Engines, Warping M acting Punching Presses, Sewing and Blond Joining Mach Measuring and Finishing Rollers, Patent Bonnet Front M Silk and Cotton Testers, Lace Presses, &c.

The Fitting or Making-up Room is very spacious, bein long, with an additional room, making a total of 240 feet. Th of machines in operation is very great. The visitor will be interested in the Patent Lace-Cutting Machine, which i for its great utility and perfection, to supersede all other m a similar character. Here also may be seen the Paten Front Machinery, which has caused such a revolution d last few years in the millinery trade, and which has made th Whitehall almost as familiar as "household words." These are made in large quantities, and exported to all parts of t Their construction is exceedingly simple, while the quantity Fronts each machine is capable of producing is truly astonishi

Descending to the Basement Story, we find in process *facture the* useful Self-Acting Looms, for which the

THE PREMISES OF MR. J. B. WHITEHALL.

has a world-wide reputation. Here, also, are numerous Lathes by Whitworth, and Planing Machines by Messrs. Fox, Brothers, together with machines for boring, screw-cutting, &c. The IMPROVED LACE PRESS, to which we have alluded, is also made by Mr. Whitehall, and from the admirable arrangement of the machine is exceedingly well adapted for all purposes for which the hydraulic press is required, and is supplied at less than half the cost. The LACE-ROLLING MACHINES are manufactured upon the same premises, and are used for giving a peculiar face or polish for which Nottingham lace is so remarkable. The steam employed on the premises is of 90-horse power, and the number of workmen engaged in the various departments about seven hundred.

We cannot quit the manufactory of Mr. Whitehall without expressing our admiration of the perfect manner in which every branch of the arts peculiar to this establishment is conducted. The particular machinery made by Mr. Whitehall requires great care and nicety in every detail; and this having been secured, we can understand how surely a reputation may be gained and sustained, even in these days of competition, when great wealth and influence are directed to manufacturing interests. The visitor to Nottingham will profit by an introduction to Mr. Whitehall, and the permission which is always courteously and readily given by that gentleman to see the processes conducted at his works.

THE PATENT STARCH WORKS OF MESSRS. THOMAS HALL, SONS, AND CO., NEAR NOTTINGHAM.

Starch being now an important article of commerce, we do not regard as trivial some brief comments upon its manufacture.

It is only a few years ago that starch was scarcely deemed worthy of notice in the ordinary works on arts and manufactures. In the largest encyclopædia of modern date it is but briefly noticed.

Even in France, the most dressy nation in Europe, its manufacture was, until a very recent period, of the rudest and simplest character.

Specimens of starch have been made from almost every herb, plant, fruit, and flower. It has been manufactured chiefly, however, from wheat, rice, barley, potatoes, and Indian corn. But experience has demonstrated beyond a doubt that an article which shall combine every good and desirable quality, can be extracted only from the very best wheat.

THE PATENT STARCH WORKS OF MESSRS. THOMAS HALL, SONS, AND CO.

The preceding engraving represents the extensive PATENT STARCH WORKS OF MESSRS. THOMAS HALL, SONS, AND CO., near Nottingham. In this establishment the finest wheat in the market is employed in the production of the brilliant white prisms or crystals known as "Hall's Starch." The wheat being first received in its entire state, passes through two dry mechanical operations, in the first of which it is sifted by patent machinery of all impurities and imperfections, and in the second, the grains are partially ground or pounded betwixt French burrs. The next stage of starch manufacture observed on the ground-floor of the Messrs. Hall's premises is that in which the grains are immersed in water for a period of about seven days. The effect of this prolonged steeping is to disintegrate the starch from the glutinous envelope in which it is contained in the grain, an effect produced by the gluten being partly decomposed by fermentation, partly dissolved by the acids formed in the course of the operation, and partly by its property of becoming partially soluble on entering upon the putrefactive change. After the fermentation is completed, the pulpy mass is mixed with clean water and pumped up into long cylinders, the bottom half of which are composed of wire gauges of various sizes, and the top half of sheets of copper; revolving brushes pass down the centre and separate the husk of the grain from the starch, which passes through the wire in a liquid state. It is now allowed to deposit in wooden vessels for a certain period, when the inferior qualities are separated from the finer ones: these pass through a variety of chemical operations, and fine lawn sieves of various meshes. It is at length put into boxes lined with a patent tubular cloth, and allowed to drain; it is then cut into square blocks, and scraped of all impurities, and put into drying stoves, where the crystallisation takes place. The starch is dried at various heats, according to the quality and the purpose for which it is required, varying from 120° to 200°. The starch manufactured at this establishment is of the very finest colour and quality that it is possible to manufacture, and is used very extensively in the Nottingham, Belgian, and other markets, for the finishing of the finest silk lace goods, it being much stronger, and less affected by the humidity of the atmosphere, than any other starch. No less than 120 pigs are fed at this establishment upon the refuse of the wheat.

THE AGRICULTURAL IMPLEMENT AND HOUSE-FURNISHING WAREROOMS OF MESSRS. DANKS AND NIXON, THURLAND-STREET, SHERWOOD-STREET, AND THE MARKET-PLACE.

A well-written article in a Nottinghamshire newspaper (upon which we cannot improve) describes these extensive premises thus:—In this aggregation of mechanical skill vast interests are represented; there is not alone the thought and labour of the designer and artisan, the capital and enterprise of the producer, the requirements of the agriculturist, but also the material necessities of the town's population. The establishment of Messrs. Danks and Nixon is unique of its kind. It contains every implement and machine a farmer can require in the prosecution of his calling, while the humblest and the most exalted in the land can step into the same mart and procure house-furnishings suitable to the smallest means or the most refined, or, indeed, the most extravagant tastes.

Ascending to the UPPER SHOW ROOM, we find ourselves in what is called the DERBYSHIRE STOCK ROOM. It is a large, well-lighted apartment, filled with grates and chimney-pieces in Derbyshire stone. Descending to the second story, we enter the FOREIGN MARBLE CHIMNEY-PIECE ROOMS. Here an elegant assortment of chimney-pieces in foreign marbles are displayed, in two large show-rooms. Among the many improvements pointed out, we noticed two which deserve mention. The first was a patent smoke-preventing grate. This is so simple a contrivance, and withal so effectual, that we wonder it has not been more generally in use. It consists of a fall-door fixed in the back of the grate, which can be opened and shut at pleasure. In the more expensive grates there is another application of this patent—that is, the patent bi-valve grate. This is an elaboration of the same principle, by means of which a room can be warmed in an incredibly short space of time, and by leaving open the second, or back-fall door, a perfect draught is maintained, rendering it impossible for the chimney to smoke. We may observe, that the stock of Messrs. Danks and Nixon, in this particular department of their business, is, for variety and extent, equalled but by two houses in England—one in London and another in Liverpool—while it is surpassed by none.

We were then conducted to the PAINT ROOM, and from it to the spa-

THE AGRICULTURAL IMPLEMENT AND HOUSE-FURNISHING WAREROOMS OF MESSRS. DANKS AND NIXON

to produce. In the lower stories are large stores, containing the heavier classes of builders' ironmongery, vulcanised india-rubber bands, tubing, &c.; and the basement story is occupied as a store for the various kinds of oil used in the lamps sold in the establishment. In addition, Messrs. Danks and Nixon employ a number of men in workshops at the rear of these premises, where every kind of repairs are done to cutlery, locks, iron and steel ware; besides having a department for gas-fitters, brassfounders, and bell-hangers in the same combination of workshops.

Foster's General Furnishing Warehouse, Long-row, and Parliament-street.

We must confess (in common, no doubt, with many of our readers) a predilection for furniture, old and new; no matter whether age has left an ineffaceable mark upon the quaint productions of a mediæval workman, or whether some sturdy modern carver has rivalled his ancient model, and added requirements which modern ease suggest; for furniture of every kind we have an instinctive regard, and we seldom pass a manufactory or show-room without a glance at their contents, and a longing desire to "fill up" some corner of our dwelling. Accustomed to the sight of well-stocked show-rooms, still we were astonished at the quantity, the variety, and perfection of the furniture exhibited by Mr. Foster, the productions of his own workshops. We can safely state that no similar manufactory in the kingdom can display a more valuable and useful collection than that which invites the visitor's attention in Nottingham. Patterns of most elegant shape, of good, solid, and well-seasoned materials, meet the eye in every direction, made under the superintendence of the proprietor, and guaranteed as the best of the kind. While taste and wealth may purchase as fashion or caprice may dictate, the most moderate means may here find the objects of their desires at a reasonable cost: there is choice for every purse. This immense furniture depôt consists of three floors of the premises, some of the rooms varying from 160 to 220 feet in length; and even this great space is occupied so thickly with the products of the manufactory, that a considerable extension of the premises is contemplated, to be filled with goods sufficient to stock the houses of a small town.

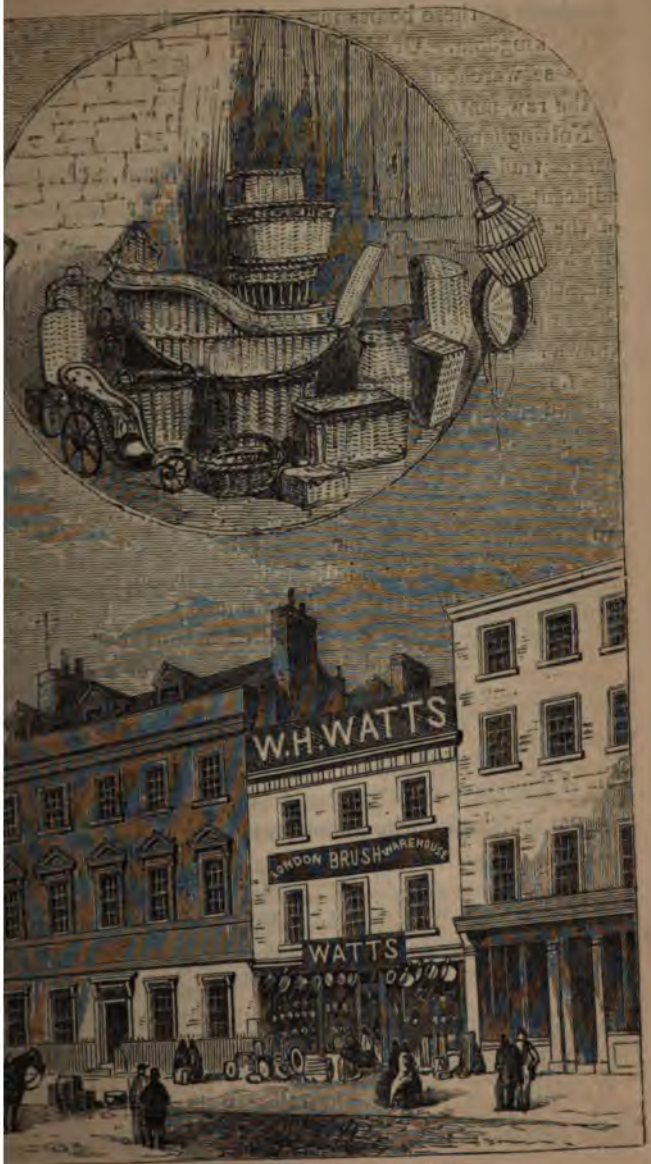
It is highly creditable to state that this business has been established

THE GENERAL FURNISHING WAREHOUSE OF MR. FOSTER.

since the year 1810, and that the present premises were built in 1858, to meet the demands of an increasing business and the requirements of the rapidly increasing town and neighbourhood, and it certainly is a credit to its spirited proprietor.

The Basket, Brush, and General Warehouse of Mr. William Henry Watts.

At the western end of the Great Market-place immediately facing the Exchange Clock is a fine old mansion, called Bromley House, on the second floor of which is a Subscription Library, instituted in 1816, the property of 234 subscribers, who, besides possessing a share, contribute each two guineas yearly. In part of the western side of Bromley House and in the adjoining premises are the Manufactory and Warehouses of Mr. W. H. Watts. Entering an externally unpretending, but very spacious shop, the visitor is astonished at the vastness of the stock contained within its 120 feet of length in a straight line. Yet the shop is not *a tenth* of the whole premises in size. One side of the old shop is devoted to the Brush and Useful, the other to the Toy and Fancy Departments. The useful department is again subdivided into the Turnery and Coopery, and the Matting Department:—here are hundreds of rolls of cocoa fibre and other mattings, and door-mats in endless choice. Passing through the shop we arrive at the Perambulator Department, where in a spacious room (formerly a lecture-hall) we saw hundreds of these useful carriages ready for despatch. The Portmanteau and Trunk Department embraces a great choice of travelling requisites, enough for a whole province. The Toy Department contains instructive and amusing articles in bewildering profusion. Cricketing Goods and Archery and Games have also their respective space, and no trifling space either, in this monster retail establishment. Beyond all these, at a distance of 300 feet from the front in a straight line, is the Basket Manufactory and Warehouses. Here we saw workmen making Basket-Carriage Bodies, Hampers, and Skips for Hosiery, Lace, and Mercery Goods, Domestic Baskets, and strong baskets generally. Hundreds, almost thousands, of Basket Carriages have been made in Nottingham, the greater part of the bodies having been furnished from Mr. Watts' workshops; at the same time there are



THE WAREHOUSE OF MR. WILLIAM HENRY WATTS.

hundreds of these bodies forwarded by rail at small expense to all parts of the kingdom. Of HAMPERS, SKIPS, AND BASKETS, we saw thousands in these warehouses, and at Mr. Watts' stores a few thousand bundles of the raw material (osiers) is regarded as a *small stock*.

Nottingham and its vicinity may be designated the home of the basket trade. Along the banks of the beautiful Trent, and on lands adjacent, and on the "North Clay" district thousands of acres of osiers of the *best possible quality are grown*, and these are sent to all parts of the kingdom; of course, many of the best are retained for home consumption, and employment is provided for hundreds of hands in working these up for the London and other markets, especially the description known as *flat-skein basket-work*—the operatives, at least many of them, in this finer branch of the trade, working at their own homes.

The brush trade forms an important part of this undertaking.

We cannot conclude our notice of Mr. W. H. Watts' establishment without expressing our admiration of the business capabilities and management of this important concern. No doubt the proprietor feels proud of its position as the chief establishment of its kind in the kingdom, when he recals to mind the little shop of twenty-five years ago on the same spot, (but frequently extended,) and how his efforts during the whole of that time have resulted in a development to twenty times its then importance, and in the patronage of all classes in the neighbourhood, and through agencies, of metropolitan, provincial, and Scotch connexions. We may add that our observations refer to the firm on the *western*, or from the railways the *furthest* side of Bromley House. This is *important* to observe.

From Nottingham we pursue our route on the

MIDLAND RAILWAY,

merely, however, alluding to the various branch lines, as it is our intention to issue *shortly* A COMPLETE GUIDE TO THIS IMPORTANT RAILWAY. The line from NOTTINGHAM TO MANSFIELD is 17¼ miles in length, and includes the stations of LENTON, RADFORD, BASFORD, BULWELL, HUCKNALL (in the church of which place Byron was buried), LINBY, KIRKBY, and SUTTON.

MANSFIELD is seated in a valley near the little river Mans, from *which it probably* takes its name, and is surrounded by *Sherwood Forest*,

f Robin Hood's exploits. It is an ancient town, with a
ch, containing numerous monuments. The principal manu-

DERBY, FROM THE RAILWAY.

factories are those of stockings and gloves.

Returning to Nottingham we will pursue the LINE TO DERBY, including BEESTON, LONG EATON JUNCTION, SAWLEY, DRAYCOTT, BORROWASH, and SPONDON Stations. At Long Eaton Junction Station there is a BRANCH LINE TO CLAY CROSS, communicating with the North Midland Railway.

From Nottingham to Derby the distance is fifteen miles and three-quarters.

nstitutes the central and *common station* of various highly

important railways, branches of the Midland Railway. The town is finely situated in a level, fertile plain, surrounded by beautiful scenery. It is a town at once of the present and the past; pervaded by the quaint air of antiquity, and yet instinct with the living energy of an actual and bustling prosperity. The streets of the older part are crooked and narrow, but the new streets are well built.

The origin of Derby is unknown. It is supposed to have arisen on the ruins of the Roman station *Derventio;* but its earliest period of historical notice is in the ninth century. At the Conquest it was given to William Peverell, an illegitimate son of the Conqueror. One of the most important events recorded in the history of Derby is in the annals of the last century, when it became distinguished as the farthest place in England reached by the army of Charles James Stuart, the Pretender. Derby gives the title of Earl to the Stanley family. It was the birth-place of Linacre, of Dr. Darwin, and the novelist Richardson.

In Mr. Stephen Glover's "Directory of the Borough of Derby," the reader will find an excellent description of this important town. We can but briefly allude to its principal features. The old town was built in an irregular manner upon a peninsula, formed by the junction of the Derwent and the Markeaton brook. From each stream the land rises to the centre and forms a ridge, upon which the churches of All Saints', St. Michael's, St. Alkmund's, and the beautiful Catholic Church of St. Mary's, are built. The land rises considerably to the south beyond the Markeaton brook, upon which St. Peter's, Trinity, and Christ Churches are erected. On the south-west bank of the same brook St. Werburgh's and St. John's Churches are built on low sites; and on the east bank of the Derwent, on the Mansfield-road, St. Paul's District Church is built. There are but few of the ancient houses now remaining. The oldest thoroughfares or streets are called *gates*, as Friargate, Bridgegate, St. Mary's-gate, Irongate, and Sadlergate. Few market towns are better situated than Derby, for a plentiful supply of all sorts of provisions. The New Market consists of 100 shops. The schools are numerous and well supported. Among the public buildings we may mention the Assembly Rooms, in the Market-place. The Theatre, Bold-lane; Temperance Hall, Curzon-street; Mechanics' Institution, the Athenæum, Royal Hotel, Post *Office, and the Derby* Bank, from their situation and magnitude, are

conspicuous in the town. There are, also, the County Hall, a commodious structure of freestone, in St. Mary's-gate; the New County Prison, the front of which may be ranked among the finest specimens of Doric architecture in the kingdom; the New Town Hall, erected nearly in a line with the south side of the Market-place, in 1828. The Infirmary occupies a fine site on the London-road; the Lunatic Asylum is four miles west of the town. One of the greatest attractions of Derby is the Arboretum, eleven acres of land, laid out by Loudon, as public pleasure-grounds, with an extensive collection of trees and shrubs. The people of Derby owe this noble place of recreation to the munificence of the late Joseph Strutt, Esq. There are in Derby ten episcopal places of worship and numerous Dissenting and other chapels. Among the former are All Saints', Irongate; the tower, built in the reign of Henry VII., 180 feet high, is the principal architectural ornament of the town. The interior contains several elegant and costly monuments. St. Alkmund's is of Late Decorated architecture, dating from 1844. St. Michael's Church, Queen-street, is of ancient foundation, and formerly a member of Darley Abbey. St. Peter's, in St. Peter-street, is an ancient Gothic structure, with a square embattled tower. St. Werburgh's, at the east end of Friargate, has a Gothic tower; St. John's Church, in Bridge-street, is a chapel of ease to St. Werburgh's. Christ Church, Normanton-road, in memory of the late Bishop Ryder, is built on the highest point in the town. Trinity Church, in the London-road, is of Gothic architecture. St. Paul's District Church, erected to the memory of Bishop Shirley, is situated on the west side of the Mansfield-road. St. Anne's, Leyland-street, is a chapel of ease to St. Alkmund's. The beautiful new Catholic Church of St. Mary's, in Bridgegate, was designed and executed under the celebrated architect, the late Mr. Pugin. The Convent of St. Vincent de Paul, for the Sisters of Charity, occupies the site of the Old China Works, on the Nottingham-road.

[*In the new and complete Guide to the Midland Railway, which will shortly be published, we shall give a detailed account of this important town and its neighbourhood. Our commercial notices of Derby, necessarily extensive, have prevented us from indulging our desire in the present volume.*]

COMMERCIAL ASPECT OF DERBY.

Derby* being situated in the centre of the kingdom, with water and railway conveyance to every part, an abundance of good coal in the immediate neighbourhood, and two copious streams flowing through it, renders it extremely favourable for the institution and carrying on of manufactures which require the aid of water or steam-power. These advantages have caused many capitalists to establish various works in the town and its vicinity. Their success has also been greatly promoted by the judicious application of machinery, and mills of the most improved construction have been erected for various purposes.

In 1199 an exclusive privilege was granted to the burgesses of Derby to dye cloth. This business continued to be the staple manufacture of the borough for some centuries. The manufacture and dyeing of wool flourished until the introduction of silk mills by John Combe, about 1717. About

* For a more extended account of the trade and topography of Derby, the visitor should consult Mr. Glover's "Directory of the Borough," a most useful handbook.

two centuries ago, the chief trade of Derby consisted in malting and brewing ale; for which the town was famous. The Hosiery trade now forms an important item. The first machine for making lace from a stocking frame, was contrived in 1777. This was superseded by the point-net machine, but it has been almost wholly outdone by the warp and bobbin net, the machine for making which was first worked about 1799. Derby has long been in repute for its Chemical and Colour Mills. The iron trade is, also, not the least important of any carried on in the town. Derby is also distinguished for its manufacture of carriages and harness, for brass-foundries, &c.

In the accompanying descriptions of most of the principal manufactures in Derby, our readers will be enabled to form some idea of the extensive commercial operations carried on there.

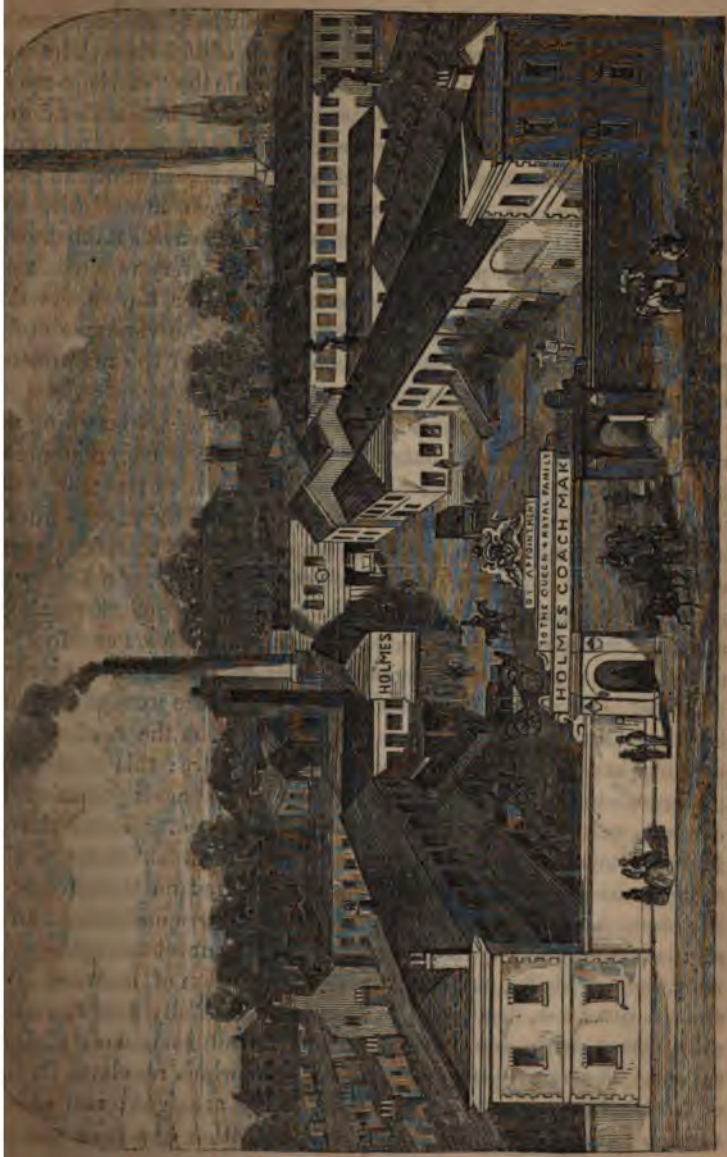
The Carriage Manufactory of Messrs. Herbert and Arthur Holmes.

It is gratifying to observe among the commercial changes incident to new requirements and new inventions, that few of our time-honoured manufactures have been suffered to lapse, but have derived fresh impetus and vigour amidst the conflicting elements of competition. Foremost among these we may mention the Art of Carriage-Building, which has occupied for centuries an important position, and which has achieved in our country a remarkable success. English-made carriages were pronounced in the World's Exhibition of 1851 superior for solidity of construction to those of other countries. We have now to introduce the visitor to one of the most extensive manufactories of this description in the kingdom. It is situated in the London-road, was established upwards of sixty years ago, and occupies over two acres of ground. The steam-engines employed are equal to forty horse-power, and appear to facilitate work of every kind on the premises. Machinery has been employed here for twenty years past; at first the introduction of it was an experiment, tools of a different kind to any then worked by power being necessary in the operations of carriage-building. At the commencement a circular saw, a fan, and a grindstone, were the only steam driven adjuncts; but the proprietors persevered, and in 1856, after 14 years' experience, and after having invented and arranged several excel-

lent machines, they decided to erect new engines and re-organize all their power machinery. The number of hands employed on the premises averages 225. Besides the establishment under notice, the same proprietors have a branch at Lichfield, in which 45 people are employed, also one near Cavendish-square, in London.

The CARPENTERS' SHOPS are in length 200 feet, and in breadth 30 feet; and here are made every description of vehicle that can be imagined, from the heavy travelling carriage, with all its accessories, to the miniature brougham, the peculiar manufacture of this firm, and weighing, instead of eleven cwt., the usual standard, only six cwt.; and yet as perfect and as elegant as possible. The entrance-yard of these premises is about 300 feet long, and the show-rooms and workshops, two stories high, are built round it. At the top is a large clock, which can be seen from every workshop, and through the walls in several places project the screwed ends of high-pressure water-pipes, to which may be attached either large hose in case of fire, or small flexible tubes for washing the dirt from carriages without injury to the paint. On each side of the yard is an inclined plane of wood, up which carriages are raised to the higher story of the workshops or show-rooms, by means of cleverly constructed pulleys. The TIMBER STORE, most important to these works, is an extensive, well-ventilated place (aired in winter by steam pipes), containing an immense quantity of well-seasoned heavy planking, and wood artificially bent, over which, in the roof of the building, are broad racks full of dry boards. The timber used in carriage-building is mahogany, cedar, pine, teak, hickory, lancewood, American birch, ash, and elm; English oak, ash, elm, sycamore, and poplar; and all these in their full growth, cut to various thicknesses, according to their uses, weathered in the air, and dried in open sheds ready for the workman's use. This store is separated from the BODY MAKERS' SHOP by a small room, in which an experienced person is stationed, whose duty it is to select and mark out suitable wood for each piece of work, cut it up with the machine saws, and deliver it to the respective workmen. Thus the chief essential, that of securing a durable and properly seasoned material for the carriage to be manufactured, is very properly made the first important operation.

In the making of coaches and carriages, as a highly skilled department *of manufacture*, the timber, the iron, the leather, the brass and plated



THE CARRIAGE MANUFACTORY OF MESSRS. HERBERT AND ARTHUR HOLMES.

metals, and other materials, are wrought by wholly distinct bodies of operatives; and there are many minor divisions of each class. The "body-makers" produce the vehicle or body itself, while the "carriage-makers" are employed on the stouter and stronger timbers beneath and around the body. In working up the varieties, tools and processes are employed similar to those used in cabinet making, together with others peculiar to coach-making. It is usual in many carriage manufactories to give out certain portions of the work, but in the immense establishment of Messrs. Holmes, each portion of the carriage, in every important detail, however minute, is made at the works, and under the supervision of careful and experienced foremen, subject also to the vigilance and control of the principals themselves, who superintend the manufacturing operations with untiring assiduity.

The BODY MAKERS' SHOP is a well-lighted room, containing numerous large black drawing boards, about twelve feet long and nine feet high, on each of which is the full-sized design of a carriage, first drawn in chalk; afterwards wood patterns are fitted to the curved lines, and by these patterns much of the carriage is built. The framework of carriage bodies is always constructed of English ash, of a light nature, put together in a skeleton form; the panels, of Honduras mahogany, are fitted into grooves made in the framing; the floors and footboards of pine and elm are screwed into rabbets, and the roof, if the carriage be close, is covered with light pine boards; a large wet hide of undyed leather, called russet leather, is then placed upon the roof, and down the sides and back of the body as low as the centre: this is moulded by pressure, exactly to the form of the roof and panels intended to be covered, and when dry is painted and japanned. From the Body Makers' Room we descend to the CARRIAGE MAKERS' SHOP, a similar room to the one we have described, but situated on the ground-floor. The framework of a carriage (which coachmakers understand to mean all that framing below the body designed to connect the springs, axles, body, pole, or shafts, according to the construction of the vehicle) is of stout natured ash, firmly framed together, gracefully swept, and when duly plated with iron, is always neatly, and sometimes elaborately carved. The *lock* (that part of a carriage which regulates its facility of turning) requires to be very judiciously arranged; and since low *vehicles* have become fashionable, much attention has been paid to it,

are framed. This is an important part of the manufacture, for a age-wheel should be firm and solid in its joints, though slightly e from its conical form, and strong from the combination of its , though light in weight and appearance: the nave or centre ld be of elm; the spokes, or radiating bars, of cleft oak sapling; ellies, or segments forming the rim, of tough ash, and the hoop or of iron or steel, the latter being now much used by this firm.

the Machine Shop is a circular saw table, having two apparas, one for cutting tenons, and the other for squaring the ends of es, and regulating their length according to the circumference of wheels for which they are intended. In this room are several very nious and effective machines for facilitating work. Here will be the heavy shears, which will sever a bar of iron two inches square; the spoke machine, which will produce from 300 to 500 perfect es per day, and is a most scientific piece of mechanism. The ths' Shops are very capacious, nearly 140 feet long, and contain forges. A peculiar feature of this manufactory is that *cast steel* is rably used for carriage springs, instead of *wrought*. Spring-making ires great nicety, such skill as experience alone can give being isite to fit and temper spring-plates properly. After surveying the e and well-filled timber yards, and the iron and steel stores, we pass the Harness Makers' Loft, where a number of men are at work

The Messrs. Holmes are carriage-makers to the Queen and the Royal Family. The first travelling carriage used by the Prince of Wales was manufactured on these premises. Besides being practical coach-builders, the Messrs. HOLMES have considerable mechanical talents, and had the honour to be selected by the Government to advise with the Board of Ordnance, relative to alterations in ammunition and other carriages; they have taken out patents for improvements in Landau head-hinges, in elliptical springs, and in wheel-tires, and their productions carried off prizes both in the English and French National Exhibitions.

THE WHITE AND RED LEAD AND PATENT SHOT MANUFACTORY OF MESSRS. COX, BROTHERS, AND CO.

The proprietors of these extensive Works, which are situated in the Morledge, are large Manufacturers of SHOT of all sizes. They have also a very high reputation for WHITE AND RED LEAD, all of which articles are exported by them to many foreign markets, besides commanding a great consumption in the home trade. Messrs. Cox, Brothers, and Co., in fact, may be ranked amongst the largest manufacturers of lead in the kingdom. The business was established about fifty-five years since, and it has now attained a prosperity which is mainly due to the high commercial integrity of the firm. Upwards of thirty workpeople are employed on the premises, aided by steam of 50-horse power.

The SHOT TOWER exhibited in our engraving is 150 feet in height, and is a conspicuous feature in the landscape scenery of Derby and its neighbourhood. The visitor will find this building a curious and interesting object. It is circular, and is well adapted to the purposes of its erection. This tower suffered considerably by fire on the 13th of April, 1824, but was shortly afterwards repaired, and is now in full operation. The formation of the shot is an ingenious process, for which the proprietors of the works have a patent. The lead, in a state of fusion, is poured from a boiler at the top of the tower through sieves into a reservoir below. The lead on leaving the sieve is found to separate into almost perfectly spherical drops or shots, and these shots, when cold, are brought up and separated into sizes by sifting. The irregular, or ill-shaped shot, are separated from the others, and after being polished with black-lead, are sewn up in bags.

THE PATENT SHOT WORKS, THE PREMISES OF MESSRS. C. & S. HEATHER AND CO.

The Morledge Works are situated in the parish of All Saints; they are bounded on the east by the Derwent, and on the north by Markeaton Brook.

The Mill Hill Lead Works, also the property of Messrs. Cox, Brothers, and Co., are situated in the parish of St. Werburgh. Here are manufactured White, Red, and Orange Lead, Litharge, both Ground and Flake, Lead and Composite Pipes, Sheet Lead, &c. For the latter, there are upon these premises large Rolling Mills. The Firm also have a large trade as Smelters.

Red lead, or *minium*, is an oxide of the metal, *litharge* being another oxide. *Flake* litharge is produced in the process of cupellation, or the separation of the *minute* quantity of silver which most lead ores contain; it is a refuse, so far as the immediate process is concerned. Red lead is, however, purposely manufactured, and the furnaces are adapted expressly for this purpose.

It is one of the wonders of chemistry to see this red powder produced simply by the action of the common air on melted metallic lead; it baffles all our usual conceptions concerning the production of colour. Pigs of lead are put into a reverberating furnace and exposed to a melting heat. The molten lead is kept continually stirred by a sort of rake. This movement causes all parts of the metal to come successively in contact with the air, which enters at the open mouth of the furnace. In five or six hours the lead thickens and acquires the look of a greyish yellow powder; it has become a mixture of oxidized lead with lead which has not yet had sufficient contact of air to have become oxidized. The contents of the furnace are then raked out, and when cold are ground in a mill to a fine state, and steeped in water. The lead particles sink, while particles of yellow oxide remain diffused in the water. The water is poured off and allowed to settle, and the yellow oxide precipitates. This oxide, when collected and dried, constitutes *Massicot;* and by again exposing it to the heat of a furnace and allowing it to absorb more oxygen, the oxide changes its colour from yellow to red, and changes from Massicot to Red lead.

The principal of this firm is William Thomas Cox, Esq., Mayor of Derby, elected an alderman of the borough in 1859, a Justice of the Peace, and High Sheriff of the County of Derby. This gentleman is a *nephew of the founder* of the house. His partner, Mr. Hankinson, is

the manager of the Mill Hill Works, where *fifty workmen* are employed. Messrs. Cox, Brothers, and Co. are *large* purchasers of Spanish lead, *from every ton of which they extract forty ounces of silver. In one week during the year* 1858 *they sent to the Mint a plate of silver valued at* £500, *the produce of extraction from lead.*

A more honourable and highly-respected commercial firm than Messsr. Cox, Brothers, and Co., cannot be found in the kingdom. A request, on the part of a visitor, to inspect these important works, will be most courteously gratified.

The Britannia Foundry and Engineering Works of Messrs. Handyside and Co.

Among the branches of trade which have attained considerable prosperity in Derby, we may mention that of Ironfounding, which has been extensively carried on for many years in this town. Among the principal firms representing this particular class of work, is that of Messrs. Handyside and Co. These gentlemen are manufacturers of Steam Engines, Shafting, and Gearing; they are also makers of Machinery for Breweries, Collieries, and Waterworks, and they have been extensively employed for many years by Government at Woolwich, Enfield, and Pembroke. Messrs. Handyside and Co. have also undertaken large contracts for Russia, and their manufactures have been widely distributed through that colossal empire, and especially in Siberia. The business was established at the commencement of the present century, and has gradually increased, until it has attained a development by no means uncommon among our persevering and intelligent manufacturers, whose steadiness, good faith, and energy are proverbial all the world over.

The Britannia Works are situated in the parish of St. Alkmund's, bounded, to a great extent, on one side by Duke-street, and on the other by the river Derwent, the latter affording great facilities for the transport of goods. The works are divided by Duke-street, those on the right being 350 feet long by 260 feet wide. In the former portion of the premises is the Moulding Shop, 145 feet long by 95 wide. Next to the Moulding Shop is the Fitting Shop, 120 feet long by 36 feet wide, and the Turning Shop, 90 feet by 36 feet wide. There is also here a large Brass Foundry.

aders may suppose brass to be, like copper or tin, a simple it is not so—it is a mixture of copper and zinc, pretty nearly portion of two of the former to one of the latter. The forma- manufactured articles from brass involves operations depending nd of article to be made. But by far the most important ses in brass are those which depend mainly on casting or The arrangements for casting in brass are very similar to astory to other kinds of casting. There must be first pre- del, representing the form and size of the object to be pro- ese models or patterns are sometimes used at once to impress ; but in other instances a permanent metal pattern is pro- tly like the original model, and from this pattern the articles rds made. The moulding or casting is effected in sand of a ar quality, which has a reverse or cavity depressed in it by , such as to constitute an exact mould of the object. The ught into a liquid state at the adjoining furnaces, and is o these sand-moulds, where it solidifies on cooling. The in fact, exactly analogous to that exhibited in ironfounding, he important addition, that a very much higher degree of ired in every part of the operation, both in the fusion of nd in the preparation of the mould.

ng our route through the premises of Messrs. Handyside e notice the BOILER-MAKING YARD, which is very exten- ljoining is a Smithy. The name "boiler" is now most com- fied to the close vessels used for the generation of steam. rs, to lessen the danger of explosion, are almost invariably rought metals, which, if burst, will tear rather than fly to st metal would do, and the plates made for the purpose are the best and toughest metal, and rolled or wrought with re.

ks on the right side of Duke-street are bounded, as before he river Derwent.

oundry, besides a number of smaller ones, are five large ten- , which will give some idea of the size of the room. The ouse is admirably adapted for its purpose, the steam employed 0-horse power. There is a large TURNING SHOP, full of hinery, with FITTING and ERECTING SHOPS adjoining, all of

them very extensive, and the entire building being four stories high. At the time of our visit here, we saw the engines for the Maidstone Waterworks, similar to those made by Messrs. Handyside & Co. for the waterworks at Chatham. Over the Turning Shop is the large Model-Making Room, in which patterns are prepared from which the castings are made. The work produced by this eminent firm is of great importance, and remarkable for its solidity and excellence. The number of workmen employed at the Britannia Works is from 300 to 350. Altogether it is an establishment of a very first-class character, and is eminently worth a visit.

Messrs. James Eastwood and Sons' Manufactories of Railway Locomotive and Carriage Wheels, etc. etc. etc.

The Works now under notice are among the most important of the Derby manufactories; they are situated at Litchurch, and are entered from Cotton-lane, formerly an old Roman road.

The traveller to Derby, about a mile before he enters the town, will observe the works on the right of the Birmingham line, a cluster of tall chimneys indicating the position. The works cover upwards of five acres of ground.

The business was established about fourteen years ago by the senior partner of the firm.

Messrs. Eastwood and Sons are manufacturers of Railway Locomotive and Carriage Wheels to the principal Companies in Great Britain, France, Russia, America, and Australia. They are also continuously and extensively employed in making forgings and heavy smith work of every description, for most of the eminent Railway, Marine, and other Engineers and Contractors.

During our visit to these works in January, 1861, we observed that the new works in course of erection at that period were destined almost exclusively to the manufacturing of Railway Tires, a very important branch of business, and one upon which the railway traveller has greatly to rely upon for the security of his life while traversing the iron roads.

Those persons who are desirous of seeing some of our most vaunted machinery in full exercise, would be highly gratified with a visit to these works, where they will have an opportunity of witnessing the stupendous *power and effect* of the patent Steam Forge Hammers; the rapidity

MESSRS. JAMES EASTWOOD AND SON'S MANUFACTORIES, DERBY.

and ease of their movements are truly astonishing. Large pi
iron several feet thick, when placed under these hammers, are in
time forged to any shape or pattern required. It is really wond
watch the process iron is put through in its manufacture. Afte
refined and converted by the puddling process into huge lum
pasty, semi-fluid consistence called puddle balls, of intense h
whiteness, they are then instantly placed under the shingling h
beneath the blows of which mighty machine they are continually
about by workmen (whose legs are encased in iron, and whose f
protected by a veil of wire of the same metal), and the mass soon
an oblong square shape, called a bloom, which is then removed to t
Rolling-Mill, and passed between the rapidly revolving grooved
until formed into rough bars some feet in length. These bars ar
wards re-heated in balling furnaces to a welding heat, and are then
across the floor and caught up by tongs held by workmen, and in
passed through the Rolling-Mill again, by men on each side, w
and repass the gradually elongating iron with such rapidity, t
iron darts from the rolls with frightful swiftness across the floor, t
and curling itself into painful contortions, as though writhing in
from the torment of the ordeal which it is compelled to pass t
until it assumes the form required, and from thence is conveyed,
hot, to the circular saws, which in an instant cut off the ends like
and there are also powerful shears which cut great bars of iron w
same ease as paper is cut with scissors, the hydraulic shears
pieces 3 inches thick and 9 inches wide.

The Fitting and Turning Shops are very fine, and in ex
order. The Turning, Boring, and Shaping Machines perform
operations with extreme accuracy, the shavings of iron to the th
of the eighth of an inch may be seen curling and corkscrewing
selves up like the light deal shavings on a carpenter's bench.

Sidings from the Midland Railway permeate the whole of the pr
affording great facilities for the transmission of goods. Some hu
of persons are employed in the works, and the machinery is
motion by steam of several hundred horse-power.

This business is one of the most extensive of the kind in the ki
and is conducted with prudence and energy.

the process into his native town, and prepared a small mill. ation failed, however; but a few years afterwards, JOHN ted the mill which is still existing on a small island in the nd Derby became the principal place in England for the e of silk, of which it forms at present the staple trade. The SSRS. PEET AND SON is one of the longest established, and esteemed in Derby. The ribbon trade was introduced into bout forty years ago by the Messrs. Peet, and shortly after hey commenced manufacturing the same by steam-power. ll credit to mention that they were the first manufacturers who made ribbons by steam-power.

afactory is situated in the parish of St. Alkmund's and All loosal new chimney indicating the spot. In order to keep he increase of business, Messrs. Peet and Son have recently derable additions to their premises. On entering the new Brook-street, we pass through a large courtyard, and ascend e warehouses, in which is an enormous stock of silk imported a and Japan. Here it is slipped or wound, which process d by subjecting it to a heat of 130° Fahrenheit, which has f softening the gum which the silkworm uses as a kind in forming the cocoon, and thus separating the various fibres other. It will scarcely be believed that there are unprin- owsters who introduce sugar into the silk to increase its

The operations to which the silk is submitted differ in com-
, according to the purposes to which it is to be applied. Some
y wound and cleaned; others wound, cleaned, and twisted once;
wound, cleaned, doubled, and twisted once; others wound,
, twisted, doubled, and twisted again. In point of fact, there-
he main operations may be classified as *winding*, *cleaning*, *doubling*,
isting or *throwing*; with a few others subordinate to them.
er a slight washing or soaking comes the process in which the
NG-ENGINE is brought into requisition. In this department of
emises are forty large winding machines, constantly in motion,
bout seventy women and girls are employed about them. Those
ave not seen a silk-mill will see that these winding machines are
in order sufficiently far apart to allow the workwomen and girls
between them; and these females are seen walking to and fro,
ing the different parts of the apparatus, removing bobbins when
are filled with silk, replacing them with other bobbins to be
ly filled, and providing a supply of the material which is to be
. The skeins or hanks, as imported from different countries, are
ays the same size, and therefore "swifts" of different diameters
vided. The swifts are also made in a light and elastic manner,
to adapt themselves readily to small differences of dimensions.
anks of silk are opened and separated, and the skeins spread in
cumference of these swifts. These swifts are ranged in parallel
f several dozen each, on either side of every winding machine, so
common axle, running through the centres of them all, will
them all to rotate. The bobbins are ranged in a row above the
, one bobbin to each swift; and all the bobbins revolve together
izontal axis.
en one end of the thread of any given skein is carried up from
ift to the bobbin above, and attached to it, the rotation of the
causes all the silk to be gradually unwound from the swift on
bobbin. The swift rotates solely by the pulling force of the
thread, as the latter becomes wound up, and this rotation causes
k to be freely given off from the swift. After this the silk is
, that is, the thread is passed through a cleft in a piece of steel,
sed in size as to allow it to pass freely through, but to detain
move all irregularities of surface.

From the Winding Rooms we now proceed to the Doublin
This is an extensive department of the manufactory, and the o
performed here require great care. The doubling is a combi
two or more threads into one, to increase the strength and t
The doubled threads are merely laid side by side in a parall
without any intimate combination. The combination is the
the next process, called *throwing*, by which the threads ar
firmly one round another. The "throwing machine" is almo
the same in principle as the "spinning machine," for twistin
We pass from the Doubling to the Reeling Rooms. On ent
Spinning Machine Department, the visitor will be struck
number and enormous size of the machines in motion, revolv
times in a minute. We should observe that in the portio
premises we have described, the *hard* silk is manufactured; th
is wound in another department.

In the Weaving Rooms, to which we now ascend, are 13
with an average of 30 shuttles to each. Here the broades
made are 4½ inches wide. In the process of manufacturing
the calculations are made on the "drum" attached to each l
looms with the slowest motion of course manufacturing th
-ribbons. The firm manufacture black ribbons only. In the T
Room, which we next enter, a large number of children are e
who, upon attaining the age of fourteen, are removed to th
department, where they obtain from five to eight shillings
The visitor will be gratified in passing through the factory t
the neat appearance and contented looks of the workp
different to what is stated of factory life generally. The reas
is that Messrs. Peet and Son have, by their liberal and en
management, gained the goodwill of their operatives, by prom
much as possible, their social welfare. In one room, devote
silk winding, in which twenty-two women are employed, t
average from eight shillings and sixpence to ten shillings and
per week. About 400 hands are employed on the premises, a
of which number are men, earning on an average thirty shil
week. The number of looms at work in the different room
department may be estimated at 140. The steam-engine
is of 40-horse power. Crossing the courtyard, we reach the

, where we see the upright Warp Mills at work, superintended
nen and girls. From hence we are conducted to the Blocking
, where the last process is effected before the warehouse receives
rfectly manufactured goods.
nore complete and judiciously conducted manufactory than that
ssrs. Peet and Son, it would not be possible to see in the
om.

Union Foundry of Messrs. Fox, Brothers, Engineers, Tool Makers, etc.

se Works, which have long been celebrated for the domestic and
e castings produced in them, are situated in the parish of Saint
ard. The premises are entered from the City-road, and are
ded on the west by the river Derwent. The buildings cover six
of ground. Close to the works is the large iron-foundry belonging
m. At this foundry are manufactured all sorts of kitchen ranges,
grates, patent mangles, furnaces, pans for bleachers, dyers, and
rs' pots and kettles, plain and ornamental palisading and tomb-
g, book-cases, and garden rollers; also castings for mill-work and
inery, water wheels and engines, pumps, gas and water pipes, lead
ting for factories and houses. The best lathes that could be pro-
d are manufactured on these premises, as are likewise slotting,
ing, pumping, planing, and wood-sawing machinery. The visitor
be shown a planing machine, the largest in England. Many of the
s for the "Warrior," the new iron-plated steamer, were planed by
We believe we are correct in stating that the grandfather of the
sent proprietor (who established the Works in Derby in 1785) has
ir claim to the invention of the *planing machine*, and one of the first
made stood for many years on the banks of the "Derwent," on the
now occupied by several fine wharfages belonging to the firm. No
ater proof of the obscurity which hangs over the history of machine
l making in the first half of this century can be given, than the origin
the planing machine for metal. The machine which Nicholas Focq
ntrived in 1751, which has been called a planing machine, has no title
the name, or any resemblance to the modern engine. It is nothing
re a heavy scraping tool, which is dragged along the bar upon which
is to operate, and rests upon it, pressed into hard contact with it by

ars afterwards, when its utility became recognised, and men
inquire into its history, various claimants to the honour of its
n were put forward, and amongst these, none appear to have a
are of the distinction than the Messrs. Fox, of Derby. It is
t confirmatory, also, that the forms which they gave to the
ave remained permanent. The founder of this house also
an improvement on Whitworth's Chain Rack. An immense
labour, accompanied with a corresponding improvement in accu-
been effected by the application of planing machinery to the
of iron and other metals, in lieu of the cold chisel and the file,
by hand.

orks undertaken by Messrs. Fox, Brothers, are of the very
character, and their machinery, of various descriptions, is
d to all parts of the world. The costly machinery recently
by the firm for Messrs. Bass and Co., the famous brewers of
may be taken as an example of the elaborate and beautiful pro-
of this firm. The Hoop-bending Machines, used by brewers,
ufactured in large numbers on these premises.

ed to the foundry are the STORES, or SHOW-ROOMS, in which
een an immense number of machines, all of approved manufac-
ll tested; in fact, wherever an extra amount of strength is
in any portion of the machines, such part is case-hardened and
proof to any undue pressure exercised upon it. The result of

machines. These are among the most interesting in the catalogue of modern inventions, although, perhaps, we use the word "modern" in too restricted a sense; for Smeaton has recorded that, in 1741, Hindley, the clock maker of York, showed him a screw-cutting lathe, with change wheels, by which he could, from the one screw of the lathe, cut screws of every necessary degree of fineness, and either right or left handed.

The large foundry to which we have previously alluded, known as the UNION FOUNDRY, is within a few hundred yards of the Engineering Works, and were added to the property of the firm in 1858, having been established about forty years previously.

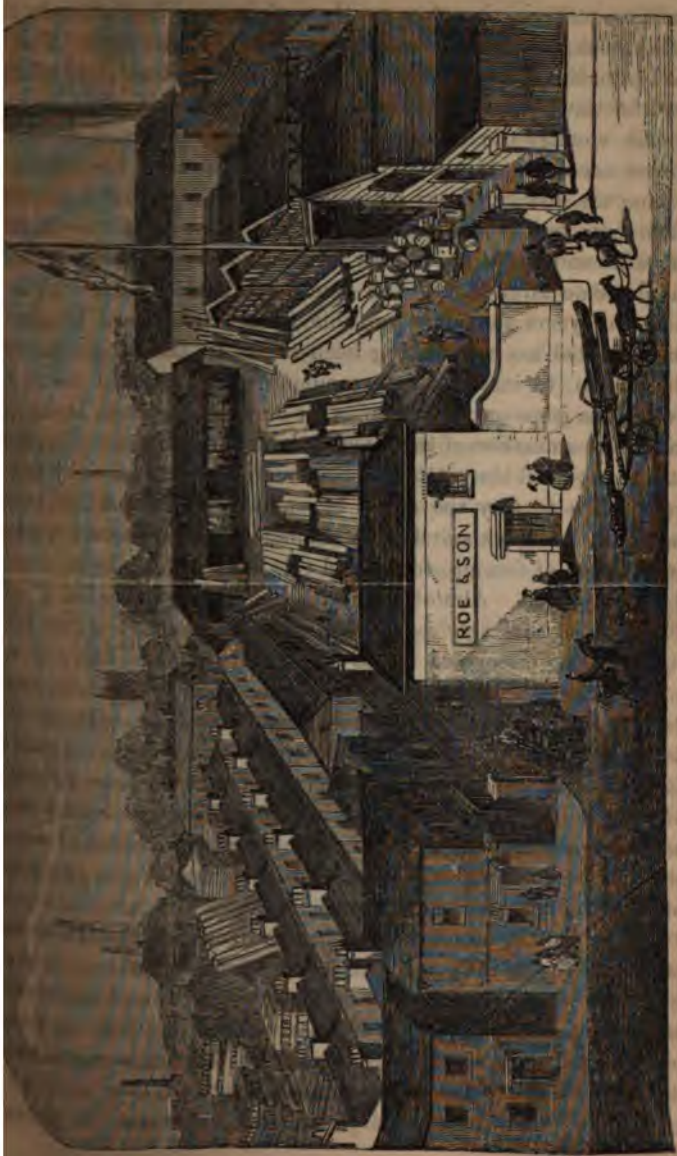
The Works form a prominent object from the beautiful grounds of Derwent Bank, the residence of the Misses Strutt, sisters of Lord Belper.

We strongly recommend the stranger who arrives in Derby to visit this most interesting manufactory. He will have an opportunity of seeing engineering operations on a colossal scale, and with a perfection only to be seen in this country. Messrs. Fox, Brothers, have in their employ about 150 workpeople, and among them are many experienced artisans.

MESSRS. ROE AND SON, TIMBER AND SLATE MERCHANTS, SIDDALS-LANE, THE MORLEDGE, AND EXETER-STREET.

The importance of these works demands particular notice, from the magnitude of the business operations carried on, being one of the largest establishments in the trade, and also from the complete and systematic manner in which the various departments of the work are pursued. It would be difficult to find a more interesting subject, or one with such numerous bearings as wood, considering the many purposes to which it is applied, whether in building ships, in erecting houses, for engineering purposes, or merely as an article of ornament. The quantity of wood of all kinds annually imported into Great Britain is not much less than ten millions of cubic feet; it is therefore a question of no small moment to know from whence we are to obtain such an enormous quantity in future years; which are the best woods, and from whence we may expect to obtain them most economically, and with the least risk of failure in the supply.

The number of woods at present admitted as first-rate for ship-



THE PREMISES OF MESSRS. ROE AND SON, TIMBER AND SLATE MERCHANTS, DERBY.

building purposes is not more than eight, viz., English oak, live oak, African oak, teak, saul, green hart, morra, and iron bark. The number used in ordinary architecture is of course far greater; and the number used for the ordinary purposes of the carpenter is very large, because in each country the strongest, cheapest, or handsomest woods are employed according to the purpose for which they are required. In tracing the history of any large forest, it will generally be found that when man first began to cut down the trees he did so in the most wasteful and reckless manner, without any thought for those who should come after him. The result has usually been, that in a brief period of years the more valuable timber trees have become almost exterminated, no care having been taken, by the regular formation of plantations, to insure a future supply. The gradual destruction of timber has gone on for centuries in our own country, leading almost to the extermination of the pride of the land—the oaks of Old England. It was not until the matter became one of urgent necessity that steps were taken to stay the evil. It was the gradual falling off in the supply of good oak suitable for shipbuilding purposes which led to the importation of foreign woods, and this has led to a due appreciation of their real value. Almost every year is adding to the list of acknowledged good and serviceable timber trees, and new sources are constantly being discovered. The visitor, to whom an inspection will be most willingly accorded, will see on the premises of Messrs. Roe and Son an immense quantity of both English and foreign timber, in the finest condition, and (what is of next importance to getting good wood) *well seasoned and preserved*, which is adapted to the requirements of joiners, builders, wheelwrights, and manufacturers by their circular and reciprocating saws, planing, moulding, and morticing machines, in the operations of which, and other departments of the works, upwards of one hundred workpeople are employed.

The transactions of the firm are now confined simply to the supply of timber for building and cabinet purposes, but take in several other branches of the trade, such as the manufacture of railway keys and trenails, pattens, clogs, gates, fleakes, the building of trams for colliery purposes, and more especially their general wood-turnery department, where the visitor will see, busy as a hive, numerous lathes *and circular* saws, at which their workpeople are occupied in the

ut and turning of general plain and polished cabinet work, in umerable varieties; also all kinds of broom heads and handles, swifts, ribbon blocks, hammer shafts, patterns, &c., used by nufacturers, silk throwsters, cotton spinners, iron founders, &c. re also dealers in plaster, cement, Holland rushes, pipe-clay, , glazed sewerage pipes, chimney-tops, &c., and carry on a trade in Bangor slates and slating.

ition to the premises and business above referred to, Messrs. Son have taken to two of the oldest established timber s in the town; the one in The Morledge, lately conducted by . and R. Dyche; and the other in Exeter-street, by Mr. W. wood, where they keep large stocks of dry and well-seasoned or various industrial purposes. At each of their yards they arves by the side of the canal, which, together with being few minutes' walk of the Midland Railway Station, give them ility for carrying on a country trade. Nor do they stay here; nd their enterprises to Hanford, near Stoke-on-Trent, Stafford- here they carry on the manufacture of the far-famed Newcastle fing and ridge tiles, bricks, quarries, drain-pipes, &c. &c.

The Derby Marble and Stone Works of Messrs. Joseph and Thomas Hall.

extensive works now under notice are situated at the corner of den's-street, in the parish of St. Alkmund. The manufactory tablished in the year 1760, on the site of the monastery of St. . The great-grandfather of the present proprietors was the dis- r of the well-known Fluor Spar, commonly known as "Blue —its local appellation. The manufacture of this spar into vases ther ornaments is a source of occupation to a limited number of s in Derbyshire. The spar is generally of a deep-blue tint, and clear, but on exposure to a considerable heat the tint becomes less muddy, and passes into a purple, and would in time be dis- d. With proper care the commoner kinds are thus rendered ble, and are largely used in the manufacture of ornaments.

e late Mr. Joseph Hall erected a steam-engine to give motion to very ingenious machinery employed in the manufacture of the

numerous elegant and ornamental articles which the Show-rooms contain. In one department of the works the visitor will see sawing machines, each with from twenty to thirty plates or knives for cutting blocks of marble into slabs, also revolving cylindrical cutters, cutting out stone filters, &c.; likewise a number of grinding and polishing machines, lathes, &c.

Messrs. Joseph and Thomas Hall manufacture all kinds of articles cut from Derbyshire marble and spar. The use of marble in England has not hitherto been so considerable and extensive as it should be. Every one must have noticed the comparative abundance of marble in slabs and ornamental house furniture in most parts of the continent of Europe, and its rarity in English houses of the middle classes.

There is no sufficient reason for this, and it is to be hoped that before long the use of marble will become general.

The Messrs. Hall are also manufacturers of articles in BLACK MARBLE from Ashford, near Bakewell. These goods are worthy of particular notice, not only as illustrating the use of a material, probably the best of its kind to be obtained at present in Europe, but as being a really valuable key to the state of the local and general taste in decoration among the higher classes of purchasers. The Messrs. Hall are extensively engaged in manufacturing CHIMNEY-PIECES, from Italian as well as Derbyshire marbles, for Drawing, Dining, and Bed-rooms. Those made of superior black marble (procured from the Duke of Devonshire's quarries) are unequalled for purity and brilliancy of polish. Many beautiful decorations are also made from the variegated alabaster found near Derby, and which can be procured in blocks sufficiently large to be suitable for chimney-pieces, lining walls, tombs, &c. Under the direction of the late Sir Henry de la Beche, the Messrs. Hall lined with alabaster the walls of the entrance of the Museum of Practical Geology in Jermyn-street, London, where also may be seen the largest TAZZA of this material ever made, and various inlaid works in the marbles of Derbyshire.

A great number of designs for MONUMENTS, TOMBS, FONTS, GRAVESTONES, &c., are kept, a selection of which will be forwarded on application. On these premises may also be seen STONE VASES, SUN-DIAL PEDESTALS, &c., made of sandstone of a very fine grain, and exceedingly *durable, which,* being slightly porous, and a bad conductor of heat and

A GROUP OF THE PRODUCTIONS OF MESSRS. J. AND T. HALL.

cold, causes vegetation to flourish in them with great luxuriance, and being made by machinery can be produced at a cost little more than the artificial stone.

NATURAL STONE FILTERS are also manufactured here from a remarkably porous, but close-grained siliceous sandstone, found in the neighbourhood of Derby, through which water percolates with rapidity, and in a perfectly clear state. They are made of various forms and sizes, to filter any quantity, at prices from two shillings and upwards.

CHIMNEY ORNAMENTS, of every attractive description and in every variety of form, will be seen in this manufactory, consisting of VASES, TAZZA, TRIPODS, MODELS OF EGYPTIAN OBELISKS, INKSTANDS, TABLES WITH MARBLE STANDS, both plain and inlaid, in imitation of the Florentine Mosaic; KITCHEN MORTARS AND PESTLES, of Derbyshire Porphyritic Marble; all these articles being exceedingly durable. By far the most remarkable and ornamental among the marble manufactures of England is the imitation, or rather application, of the method of inlaying, long known as Florentine Mosaic, which affords employment to a considerable number of ingenious workmen. The inlaid work of Derbyshire is performed on solid slabs, generally of black marble, on which the forms to be inlaid are first sketched in outline, and then cut out to a small depth by proper tools. The marble to be inlaid having been first sawn into thin veneers, is cut into the required shapes by saws and files, and cemented into the recess prepared for it, either by a soft cement or by shell-lac. The whole surface is afterwards polished together. From the nature of the method it will be seen that the chief ingenuity consists in the selection of proper patterns, and their adaptation to the marbles which can be obtained for inlaying. The DERBYSHIRE MOSAIC is by no means costly, compared with other similar works, and may easily be obtained from the Messrs. Hall, at prices little, if at all, higher than those commonly asked for imitations of Florentine work of far less artistic or mechanical merit. So great has been the increase of business, that the Messrs. Hall have determined upon the reconstruction of the premises, and in a future edition of this Guide we hope to introduce a view of the new works, and to give a description of the same.

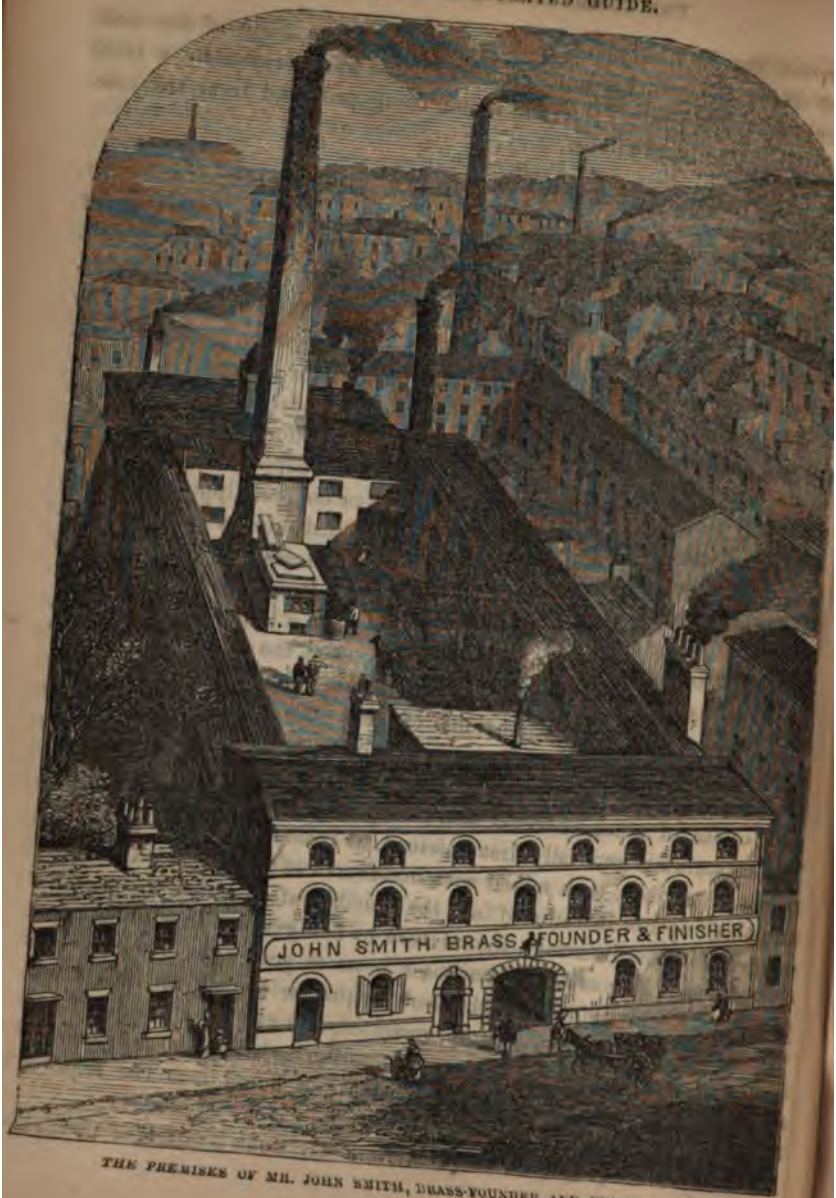
We may add that the Messrs. Hall are large manufacturers of *MARBLE BUTTONS*, which are remarkably beautiful and useful. In the

ing Exhibition of 1862 we expect to see many of the most
ng and valuable productions of these works, especially a large
an Malachite Table, the stone being procured from the cele-
Burra-Burra mines.

The Brass Foundry of Mr. John Smith.

isitor to Derby who is desirous of obtaining some knowledge of
and manufactures which have obtained for that town such well-
d renown, should not omit an inspection of the extensive estab-
t of Mr. John Smith, in Traffic-street, parish of St. Peter's. The
ude and interest of the manufactures conducted on these premises,
some description of them. Brass (most of our readers are
) has, from the remotest antiquity, been extensively applied to use-
d ornamental purposes. It was made long before zinc was obtained
metallic form, by exposing grain or bean copper, which was pro-
d by pouring melted copper into water, or copper clippings, to great
n crucibles, with calcined and powdered calamine, a native carbon-
f zinc and charcoal; but in 1781, James Emerson obtained a patent
aking brass in a more direct way, by melting together its consti-
metals. In the manufacture of brass on a large scale, two parts
eight of copper to one part of zinc are used, the zinc being one-half
eight of the copper; but alloys are made for particular purposes,
less or greater proportions of zinc. The *indirect* method of
ing brass is that which is generally followed in England and else-
re, and consists in heating in crucibles or pots a mixture of calamine
rbonate of zinc), charcoal, and thin pieces of scrap or grain copper.
e calamine is generally first calcined, or roasted, so as to expel any
es of sulphur, then mixed with one-fourth of its weight of charcoal,
this mixture introduced into the crucible, after which the metallic
per is diffused through the mixture by being beaten in with hammers
mallets. For ordinary purposes brass is generally first cast into
s of about 100lbs. weight, and a quarter to half an inch thick,
ch can be readily broken up, remelted, and cast in a mould of any
irable shape or size. The crude casting so obtained is generally
rried to a turning-lathe, and turned and bored into the required
m with iron tools.

The steam employed on the premises *of Mr. John Smith* is of 15-horse



THE PREMISES OF MR. JOHN SMITH, BRASS-FOUNDER AND FINISHER.

power. The visitor will be shown the large FOUNDRY with nine furnaces, and DRYING STOVE, ENORMOUS CRANE, &c. The MOULDING and CASTING operations are confined to this department of the Works. Ascending to the MESS ROOM, we shall find it filled with *Crucibles* (the chemical vessels in which substances are exposed to high temperatures). Adjoining is a TURNING SHOP, in which are several machines of costly manufacture made by Messrs. Fox, Brothers, of Derby; here are also SHAPING Machines, LATHES, &c. Connected with this department is a larger TURNING SHOP, in which are fourteen finely-made Lathes, besides several DRILLING Machines. The FITTING SHOP, which adjoins, contains sixteen Anvils, and presents a picture of busy work, of which a painter of such subjects would make something.

Every kind of Brass Work, STATIONARY AND LOCOMOTIVE ENGINE FITTINGS, and the various articles in brass required by the leading brewers, are manufactured on these premises. The whole of the works is placed under the most experienced management, the proprietor taking a very energetic superintendence, and excellent workmen being engaged, so that the productions of Mr. John Smith's Foundry are highly esteemed, and are extensively distributed over the globe.

On the ground-floor of this Manufactory, on the left of the entrance, and joined by the Offices, are the large FETTLING SHOPS; and in the yard, at the base of the high chimney, is a furnace of sufficient capacity to hold seven tons. On the right of the entrance are the well-stocked BRASS WAREHOUSES, and in the yard is a gigantic WEIGHING MACHINE of five tons.

A Brass Foundry, conducted on the extensive scale of Mr. John Smith's presents a scene of remarkable interest, which the visitor should, if possible can, enjoy; for there is real pleasure in observing whatever is useful, and learning how the arts and manufactures of our country are sustained. A traveller cannot learn too much, nor profit too well, by the opportunities afforded to him of acquiring knowledge which cannot be gained at the fireside or within a contracted circle of life. Most strongly, then, we recommend the visitor to profit by his stay in Derby, and to see the very interesting manufacturing operations of these works.

The Elastic Fabric Manufactory of Mr. George Holme.

This branch of the manufacturing arts has only been introduced of late years into Derby, but the success which has attended it has been most encouraging. The establishment under notice has been in operation since 1850, and its productions are in great demand throughout the country, and are remarkably perfect and substantial. The works are under the management of Mr. George Holme, jun., who has contributed, by his energy and perseverance, to extend the reputation of the business. The greater portion of the Elastic Fabrics manufactured at this Establishment are for Foreign markets.

The premises are in the parish of St. Alkmund, and are bounded on the west by the river Derwent. The lofty building, three stories high, is a conspicuous object from the Midland Railway. The entrance is from Bath-street. The machinery is worked by a steam-engine of 10-horse power, and was made by Mr. Holme with considerable engineering skill. We may also mention that the silk used is "thrown" on the premises. It is these great facilities for manufacturing purposes which have enabled the proprietor to extend so considerably his business connexions, and to obtain a reputation, second to none, for good workmanship. Although comparatively a modern invention, the manufacture of elastic fabrics is become an essential to our comfort. The number and usefulness of the articles made, their durability and protective qualities, place them on the list of *essentials*. The visitor will have an opportunity of inspecting the singularly interesting operations of this manufactory, and he will be struck with the beauty and perfection of the machinery, and the incredibly short time required for making these elastic fabrics. The machines are so perfectly adjusted to the nature of the work they have to perform, as almost to appear endowed with intelligence. Any explanations with regard to the various processes will be given by the foreman of the works to the visitor who is favoured with permission to inspect them. We may add that Mr. Holme is an extensive manufacturer of Bonnet Wire, and has some beautiful machinery in work with this article.

THE ELASTIC FABRIC MANUFACTORY OF MR. GEORGE HOLME, DERBY.

From Derby the Midland Railway opens one of the most important communications in the country southwards, as far as Bristol, which is fully described in our OFFICIAL GUIDE TO THE GREAT WESTERN RAILWAY. At Whitacre, on the Birmingham and Derby Line, there is a branch line to Hampton on the London and North-Western Railway. At Burton-on-Trent there is a line by the Leicester and Swannington Railway to Leicester, and thence to Rugby. From Derby there is a branch line to Ripley, a distance of ten miles, by Little Eaton, Coxbench, Kilburn, and Denby.

Shaping our course northwards from Derby, we reach, six miles and a half distant, DUFFIELD STATION, and pass through Milford Tunnel, 830 yards in length. Two miles beyond is BELPER STATION, and at a further distance of three miles AMBERGATE STATION, where visitors to the Derbyshire Peak quit the railway for Wirksworth, six miles distant.

At Ambergate there is a BRANCH LINE OF THE MIDLAND RAILWAY TO BUXTON, eleven miles and a half in length. Midway on this line is MATLOCK BATH.

MATLOCK BATH.
(From a photograph by Poulton.)

Matlock is situated on the Derwent, and is a favourite summer resort

invalids and tourists. Matlock dale, in which the village stands,

VIEW IN LOVERS' WALK, MATLOCK BATH.
(From a photograph by Poulton.)

tends for two miles north and south, and is bounded on each side by
ep rocks, whose naked sides rise to the height of about 300 feet.

HIGH TOR, DERBYSHIRE.
(From a photograph by Poulton.)

The Derwent flows through the dale, and its banks are lined with trees, except where the rocks rise almost perpendicularly from the water. Of these the most striking is the High Tor, which rises to the height of 396 feet. Opposite to it is Masson, a rock of greater elevation than the Tor, but inferior to it as a picturesque object. The mineral springs and the beautiful scenery of Matlock are its chief attractions. The buildings are grouped in a singular manner up the mountain side. Matlock is not only a place full of interest in itself, but is also the centre of a district, every part of which has its attractions. There are caverns and mines, petrifying wells, and rocks to visit. The walks in the neighbourhood are very delightful.

From Matlock there are numerous delightful excursions, which may

LION'S HEAD ROCK, DOVE DALE.
(From a photograph by Poulton.)

well occupy the tourist two or three days. Our limits will only permit us to notice Dove Dale and Ashbourn, about thirteen miles from Matlock, and in the midst of a very delightful country. On entering Dove Dale the sudden change of scenery from that we have left is powerfully striking. The brown heath or richly-cultivated meadow is exchanged for rocks abrupt and vast, which rise on each side, their grey sides harmonized by mosses, lichens, and yew trees, and their tops

ed with mountain ash. The length of Dove Dale is nearly t
and it is in no part more than a quarter of a mile wide.

THE HOME OF MISS FLORENCE NIGHTINGALE, LEA HURST.
(From a photograph by Poulton.)

g been famous among anglers. On the Staffordshire side
s Ilam Hall, a Gothic building, erected a few years ago.
ch contains a monument by Chantrey. Near
ourn, a pleasant town situated in a rich
r from the east or left bank of the Dove

TRINITY CHURCH AND HACTORS, DERBYSHIRE.
(From a photograph by Poulton.)

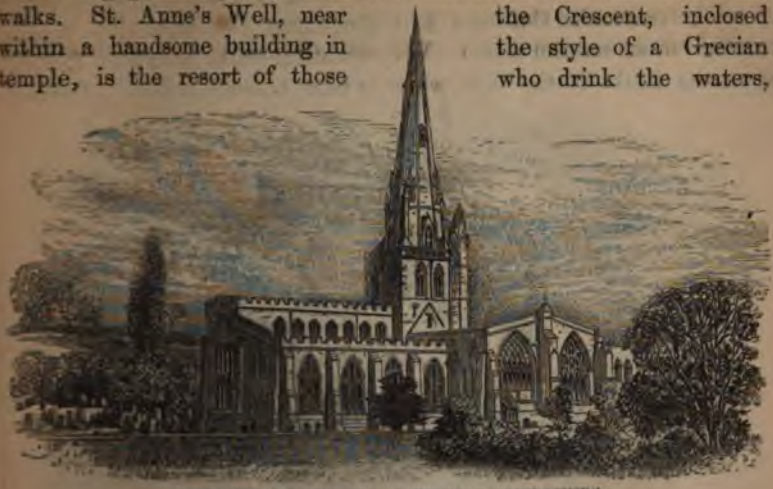
The Church is an ancient building, dating from 1241, and contains several fine monuments.

Buxton is situated in the lower part of a deep valley, surrounded

Ham Cross and Fountain, Derbyshire.
(*From a photograph by Poulton.*)

by bleak hills and extensive tracts of moorland, near the source of the Wye, at an altitude of between 900 and 1000 feet above sea-level. The old town stands upon much higher ground than the new, and has the remains of a cross in the market-place. Buxton is celebrated for its waters, which annually attract many thousand visitors. The springs are of the calcareous class, and have long been celebrated for their medicinal virtues. The water is pleasant to the taste, and has a clean and sparkling appearance. The active ingredients appear to be the hydrochlorate of soda and carbonate of lime. The bathing season commences in June and ends in October. The upper part of Buxton is a Derbyshire village; the lower, in the elegance of its buildings, its show, and its parade, approximates to Bath. The Crescent, erected in 1781, is a fine range of buildings in the Grecian style. Fronting this

is a rising ground, planted with trees, and laid out in shrubberies and walks. St. Anne's Well, near the Crescent, inclosed within a handsome building in the style of a Grecian temple, is the resort of those who drink the waters,



ASHBOURN CHURCH, NEAR DOVE DALE, DERBYSHIRE.
(*From a photograph by Poulton.*)

which are conveyed thither into a marble basin, both hot and cold water being obtained within twelve inches of each other.

BASLOW CHURCH, DERBYSHIRE.
(*From a photograph by Poulton.*)

About three miles south-west of the town is Poole's Hole, a large dreary cavern under Coltmoss Hill, abounding with stalactites, representing various natural forms. Very beautiful walks have been formed along the banks of the Wye, which is here a small stream. Beyond

POOLE'S HOLE, NEAR BUXTON, DERBYSHIRE.
(*From a photograph by Poulton.*)

these extends what is called the Duke's Drive, forming a circuit of nearly three miles around the town. Axe Edge, one of the highest summits in the Peak of Derbyshire, is generally visited from Buxton. It is about three miles from the town, and rises 1000 feet above the level of the Crescent.

Half a century ago Buxton was described as situated amidst the most dreary and cheerless scenery in the district of the Peak.

Two miles from Buxton is the Diamond Hill, where the Buxton diamonds are found, close to which there is a tower built by the Duke of Devonshire.

Four miles distant is Chee Tor, a huge mass of limestone, which rises about 300 feet perpendicularly from the river Wye.

There are various other places in the vicinity which deserve a visit, such as Miller's Dale, Cresbrook, Monsal Dale, Ashford, &c.

Twelve miles from Buxton is *Castleton*, a village on the edge of a

valley of considerable beauty, and the bold eminence which overlooks the village is crowned with the remains of an ancient castle.

Returning to Ambergate, we pursue our northern route to Rotherham,

CASTLETON, NEAR BUXTON.
(*From a photograph by Poulton.*)

passing through Lodge Hill Tunnel, 260 yards long. The railway is now carried along the beautiful valley of the Ansa, which stream it crosses several times. The tourist will see the ruins of Wingfield Manor House, occupying a commanding situation. Three miles and a half from Ambergate we arrive at WINGFIELD STATION, and four miles and a quarter beyond at STRETTON STATION. In this neighbourhood

is *Hardwick Hall*, a seat of the Duke of Devonshire, an interesting old mansion in the Elizabethan style, erected by the Countess of Shrewsbury.

The Hall stands on the brow of a bold and commanding eminence,

RUINS OF WINGFIELD MANOR HOUSE, DERBYSHIRE.
(*From a photograph by Poulton.*)

overlooking a vale of great beauty. The most remarkable apartments in this interesting edifice are the state-room and the gallery. At one end of the former is a canopy of state, and in another part a bed, the hangings of which are very ancient. The picture gallery contains a choice collection of valuable portraits. At about one hundred yards from the Hall stand the remains of the old baronial edifice where Queen Mary and Arabella Stuart were confined. In the reign of Henry VII. it was the residence of the Hardwick family, but the whole pile is now but a splendid ruin, luxuriantly mantled with ivy.

Three miles and a half from Stretton, we reach CLAY CROSS STATION, and after passing through a tunnel one mile long, and by North Wingfield we reach, four miles distant, CHESTERFIELD STATION. Chesterfield is conjectured, from its name, to have been a Roman station. The appearance of the town is not very prepossessing. There are several silk, *lace*, and *pipe* manufactories, potteries, iron foundries, and collieries

HARDWICK HALL, DERBYSHIRE.

in Chesterfield and the neighbourhood. The parish church, erected

COUCH, HARDWICK HALL.

during the thirteenth century, is a beautiful and spacious edifice, with an elegant square tower and spire.

BRINHAM ROCKS—THE DRUIDS' WRITING DESK.
(*From a photograph by Poulton.*)

Bolsover Castle, about six miles east of Chesterfield, is an unfinished mansion, erected early in the seventeenth century, on the site of an ancient castle belonging to the Peverils. The present edifice was begun by Sir Charles Cavendish. It has a castellated appearance.

While at Chesterfield, the visitor should profit by an excursion to CHATSWORTH, ten miles distant, and HADDON HALL.

CHATSWORTH, the magnificent residence of the Dukes of Devonshire, is in the Italian style of architecture, and has a very noble appearance. The old house, built by Sir William Cavendish in the reign of Queen Elizabeth, and finished in 1557, was taken down shortly before the Revolution, and the present mansion was erected by the celebrated patriot, William, first Duke of Devonshire.

The mansion was considerably enlarged by the late Duke, who added a whole wing, and three grand entrances in the form of a Roman triumphal arch. The structure is built in the Ionic order, with a flat roof surrounded by a balustrade, and forms nearly a square of about 190 feet, *having four regular* fronts, inclosing a quadrangular court, in the centre

of which is a fountain and a statue of Orion. The principal entrance is on the west, by a noble flight of steps, to a terrace extending the whole length of the building. The front, which faces the garden, is magnifi-

ENTRANCE GATE, CHATSWORTH.

cent. Under the cornice of the frieze is the family motto, "Cavendo tutus," in large letters.

The *Great Hall*, of which we annex an engraving, is a stately apartment, decorated with great taste and elegance. The Library contains the rarest literary treasures in choicest bindings. In early editions it is exceeded by none in England, except by the celebrated library at Althorp. It possesses, among other precious works, the oldest Florentine edition of Homer: printed on the finest white parchment with the most elegant type, the initials painted in miniature, it offers a most beautiful object to the eye. Here are also some of the rarest impressions by Caxton.

The manuscripts, with miniatures, are extremely rare and beautiful. The most important is a Benedictionale, executed between the years 970 to 984, and a Missal of King Henry VII.

To enumerate the costly and beautiful productions of art in this magnificent abode would fill a goodly-sized volume; we can but barely allude to some of the principal objects in the various apartments. To commence with the first floor:—The first room contains some rare paint-

ings by Giordano, Lotto, Koningk, Murillo ("The Blind Beli… receiving Alms"). The second room possesses subjects by Tinto… Cornelius Jansen ("Charles I. as a Young Man"), Titian ("Philip … King of Spain"), Zucchero ("Mary, Queen of Scots," full length, *li…* size, in a rich dress, with a pleasing but not beautiful face). The centre of a round ottoman in this apartment is ornamented with … beautiful copy of the Venus de Medici, in marble. In the gallery are

GREAT HALL AT CHATSWORTH.

paintings by Teniers ("Temptation of St. Anthony"), Holbein, Claude Lorraine, Paul Brill, Vandervelde, Poelemburg, Titian, Berghem *("Seaport")*, Nicolas Poussin ("Holy Family"), Sir Peter Lely

ge of Europa"), L. Carracci ("Crucifixion"), Albano, Gaspar
in, Jan Van Eyck, Carlo Cignani ("Joseph and Potiphar's
"), with numerous other subjects by the first masters.
he Billiard Room is the celebrated picture of Bolton Abbey, by
vin Landseer.
irst of the State Rooms on the second story contains a number
le busts by Chantrey, Nollekens, Rauch, &c. There are also a
d clock in malachite, presented to the late Duke of Devonshire,
by the Emperor Nicholas of Russia. The ceiling is painted in
, as in all the rest, in the same style as those of the Conser-
the walls are entirely panelled.
second State Room is an old leather hanging, with a large gilt
the uncoloured leather. Here are also two very rich state
d four caskets of great beauty.
ngings in the third State Room are the same as in the last
A large canopy of black velvet, richly adorned with old em-
in deep relief, bears the Cavendish arms and motto, "Cavendo

binet contains a case of seventeen portraits in enamel. An-
m contains three tapestries from the cartoons at Hampton

hapel is fragrant with the cedar wood of which it is almost
mposed. It is a richly ornamented place; the wood sculp-
g by Gibbons, and the altar by Cibber. The latter is com-
the fluors and marbles of Derbyshire, and it is enriched with
n full relief, most exquisitely finished, of Faith and Hope.
ollection of drawings at Chatsworth is remarkably rich, and
ly formed in the first half of the eighteenth century. They
of subjects from the Tuscan, Roman, Lombard, Venetian,
, German, and Netherlandish schools.
ining Room, of dimensions capable of dining with ease fifty
contains some fine marble sculptures by Westmacott, and
ortraits by Vandyke, Honthorst, Kneller, &c.
is an interesting collection of fossils of Derbyshire, collected
e Duchess of Devonshire.
Kitchen has the appearance of a large hall, with a lofty stone
oof. The cooking processes *are managed by hydraulic* apparatus.

The Sculpture Gallery, of which we annex an engraving, is of large dimensions, and is lighted by three skylights. The closely-joined blocks of fine sandstone being left unstuccoed, give an impression of solidity. The sculptures, about forty in number, are placed upon pedestals and pillars, most of which are of costly materials—porphyry, granite, cipollino, &c. The statues and busts are by Canova (the Sleeping Endymion,

SCULPTURE GALLERY, CHATSWORTH.

Mother of Napoleon, Bust of Napoleon, Hebe, &c.), Thorwaldsen (Venus with the Apple, Bust of Cardinal Gonsalvi, and various *reliefs*), Rudolph Schadow (Woman Spinning), Kessels (Discobolus), Tenerani, Gibson (Mars and Cupid), Richard Westmacott, &c.

Besides these, there is a large collection of splendid vases, pillars, slabs, marbles, and stones.

In the mansion are some fine carvings in wood by the famous Gibbons.

From the Hunting Tower a magnificent prospect is obtained over *the surrounding* country.

suite of rooms called "Mary Queen of Scots'," are very elegant, ere built on the supposed site of those in which that unfortunate ss passed thirteen years of her captivity, in the old house of worth. At the north side of the bridge, of three arches, forming

HUNTING TOWER, CHATSWORTH.

approach to the mansion, is an old square tower, surrounded by a at, called the "Bower of Mary Queen of Scots," from a tradition at this was a favourite walk of the imprisoned monarch.

Chatsworth gardens are among the most celebrated in the kingdom. he genius of Sir Joseph Paxton, called into requisition by the late

lamented Duke of Devonshire, has been displayed in the building of magnificent conservatories, colossal fountains, and immense out-houses. The grand conservatory is 300 feet long by 145 feet wide, and comprises an area of about an acre, in the centre of which is a carriage road. Nothing of the kind was ever before planned on so gigantic a

BOWER OF MARY, QUEEN OF SCOTS.

scale. The "Emperor" fountain is one of the wonders of the Peak, sending forth its waters to a height of 260 feet from the basin of Tritons that receives its airy shower.

The Park is about nine miles in circumference, and is beautifully diversified with hill and dale. The prospects from different parts of it are exceedingly fine; towards the north, the dusky mountains of the Peak rear their lofty heads to the clouds with extraordinary grandeur and sublimity.

The Temple Cascade, which forms the subject of our illustration, is thus named from a water temple, near which the visitor can repose at his leisure and enjoy the exquisitely beautiful scenery around. When this is exhibited, a vast quantity of water rushes with considerable violence from the domed roof of the temple, and from a number of lions' heads, dolphins, sea-nymphs, and other figures with which it is ornamented, and, falling into a basin in front of the building, is discharged

from thence over a series of steps down a steep hill. The rock-work is remarkable for its wildness and beauty. A set of beautiful photographs of Chatsworth have just been published by Poulton, of London.

EMPEROR FOUNTAIN, CHATSWORTH.

Four miles from Chatsworth is *Bakewell*, a place of great antiquity, seated on the right bank of the Wye. The church contains some curious monuments, an ornamented Saxon arch, and old front. East of the church stands a venerable cross, conjectured to be upwards of 800 years old.

Bakewell is much resorted to by anglers, as the river abounds with trout, grayling, &c. On *Stanton Manor*, four miles distant, are rocking stones, and a Druidical circle.

TEMPLE CASCADE, CHATSWORTH.

ROCK-WORK, CHATSWORTH.

Two miles beyond Bakewell we reach

HADDON HALL, DERBYSHIRE.

ADDON HALL, the seat of the Duke of Rutland, situated on a bold eminence on the east side of the Wye, and affording a complete picture of an ancient baronial residence. No part of the building is of a date later than the sixteenth century. The tower over the gateway, on the east side of the upper quadrangle, is supposed to have been built in the reign of Edward III. The chapel is of the time of Henry VI., and the tower at the north-west corner is nearly of the same period; the former is enriched with painted windows. The gallery was erected in the reign of Queen Elizabeth. All the principal rooms, except the gallery, were hung with

loose arras, a great part of which still remains. The doors were concealed behind the hangings. The chaplain's room is an interesting old place, and contains a number of objects calculated to convey an idea of the mode of living two centuries ago. The park was ploughed up and cultivated about sixty years since; but, in the vicinity of the mansion, there is still a sweeping group of luxuriant old trees. The gardens are composed of terraces, ranging one above another, each having a sort of stone balustrade. The prospects from the leads and the watch-tower are extremely fine.

GARDEN ENTRANCE, HADDON HALL.

The Great Hall still contains the old oaken table at which the lord feasted his more favoured guests. The Minstrel's Gallery is carved and panelled, and ornamented in the true old fashion, with the antlers of stags, memorials of the chase. There is no ceiling—the roof and rafters are exposed to view; the fireplaces are large, and the walls are wainscoted all round, to a certain height. From this Great Hall, at the upper end, in the corner on the left hand, are two passages; one opening upon the terraces in the garden, and the other leading to the grand staircase.

Fourteen miles from Haddon Hall is NORTON HALL, situated in one of the most agreeable parts of Derbyshire; and, independent of its own peculiar attractions, deriving interest from its contiguity to Norton village, in the southern precinct of which, Jordanthorpe, the great *sculptor, Sir* Francis Chantrey, was born. The walk to this spot affords

some delightful prospects, and will well repay a visit. The mansion is modern, having been rebuilt in 1814, on the site of an ancient structure of some pretensions to interest, especially from its position amidst fine park scenery, which forms at present one of its greatest attractions. The property now belongs to one of England's princely manufacturers—one of those enterprising men of genius to whom the greatness of our country, in a commercial sense, is much indebted. This gentleman is Charles Cammell, Esq., who is lord of the manor and lay-rector of Norton and Coleaston, and the owner of the gigantic Cyclops Steel and Iron Works at Sheffield, and who has attained a distinguished position, by habits of untiring industry and integrity of conduct.*

The mansion to which we now introduce the reader was purchased by Mr. Cammell in 1851. It is of a striking and substantial character, and in the Grecian style of architecture. The estate is very extensive.

Through a plantation which borders these pleasant grounds, a circuitous walk, which belts the whole park, has been carried near the principal front of the house; it enters into an open shrubbery, composed of trees of the freshest and most luxuriant foliage, amongst which tufts of flowers, woodbines, and roses are plenteously scattered. This walk leads to the flower garden, which is a rich collection of rare and beautiful plants. Leaving this lovely spot, the path proceeds through a grove of trees, whose tall trunks admit, from the many openings between, a distant view of more tangled foliage. It afterwards passes along the western verge of the park, crosses a small part of a verdant slope, and then dips into a romantic wood, which covers two sides of a deep and picturesque dell.

The grounds have been arranged with admirable taste, and so as to favour the advantages which Nature has liberally bestowed on this locality. Their undulating character has favoured this disposition; and with its dells, the cascades, rustic bridges, and arbours, complete a charming picture. Several acres of land have been left entirely to the guidance of Nature, and these form a pleasing contrast to the cultivated portions. From every part of the grounds the tower of the church at Norton is seen with peculiar effect. The visitor will admire a fine avenue of sycamore trees, and another of beech limes, and some

* See our Commercial Aspect of Sheffield.

NORTON HALL AND CHURCH.

ancient yews recommend themselves to notice by their peculiarly imposing appearance. At the time of our visit, the primroses were peeping forth in every part of the fields, clothing them in a beautiful drapery of spring. Among some evergreens is placed a tomb to a favourite dog, belonging to a former owner of this fine estate. Near to this is a grotto, built of granite, and strong enough to wear for ages. Close to this structure is a group of Rhododendrons, which would bear off the prize of perfection, even in this rich and fertile county. Entering the grounds from Chesterfield-road through the large gates, and by a substantially-built lodge (one of three belonging to the mansion), the visitor will have a splendid view of the estate, with hill and dale scenery in the distance. Before him is the park, with its fine old trees, many of which, covered with ivy, bear the impress of centuries. By the carriage-drive of a mile we reach the Hall, which we shall leave undescribed for the present; and deviating to the left we skirt the woods, where the wild cherry trees bloom with singular beauty, and the wild hyacinth opens its blue-and-white flowers, and vegetation, of a small or large growth, thrives with a luxuriance that does homage to this invigorating climate. Formerly the London-road passed through the park and village of Little Norton, as is shown by the ravine-like appearance of the spot. Pursuing our way through the woods, we cross the rustic bridge over the cascade to the large cascade, which is situated in a lovely and secluded spot, where the visitor may rest his steps awhile, in accordance with the following inscription, which was formerly placed here by a proprietor of the estate:—

"Here, stranger, rest thee in this calm retreat,
Secure from winter's storms and summer's heat;
Let calm serenity possess the mind,
And in this mossy seat contentment find."

Here the waters pour into the dell, over solid granite:—

"Making sweet music with th' enamell'd stones;
Giving a gentle kiss to ev'ry sedge
He overtaketh in his pilgrimage."

We now ascend to the great lake, one of three expansive sheets of water, and covering two acres and a half of land. These congenial solitudes are the haunts of wild-fowl, which are abundant here. In the centre of the lake is a pretty *island, with a path* around it, shaded by

fine old beech and sycamore trees. At one end is a boat-house, large enough to contain a hundred persons, seated, and from whence a beautiful view of the lake and the grounds beyond is obtained.

Leaving the boat-house and wandering down the walk at its side, we notice the large and substantial lodge, with its square tower, octagon rooms, and looking like a villa residence.

We must not omit to mention the new lodge from the Derbyshire-lane, facing the high road to Sheffield. This structure is very pleasing in appearance. The gates are of excellent workmanship, and the pedestals are surmounted with figures of camels' heads, the arms or crest of the wealthy and amiable owner of this splendid estate.

Rhodes, in his "Peak Scenery," observes that "Norton Park is well stored with stately trees. The oak and elm, and particularly the ash, find kindly nurture in the soil, and flourish in health and beauty; and about one hundred yards from the house, by the side of the carriage-road which leads to Little Norton, there is a noble beech, which extends its ample branches over an area of the circumference of more than eighty-five yards, and is of itself a picture for an artist. I have stood beneath the leafy canopy of this magnificent tree, and have sometimes traced with curious interest the various branches from their connexion with the parent trunk, through numberless ramifications, until their individuality was entirely lost, and their hundred arms terminated amongst a mass of surrounding foliage."

From Norton Park many openings occur that admit distant views of the country around. To the west, the hills of Beauchief are singularly beautiful; and Ecclesal Wood, which declines gently into the vale from the right of the landscape, is a very pleasing feature in the scene; beyond, the heathy moors of Derbyshire fill up the distance, which is often rich in colouring, and picturesque with light and shadow.

Having strolled through the park and grounds, where the reflective reader will

> "Find tongues in trees, books in the running streams,
> Sermons in stones, and good in everything,"

we will now introduce him to the mansion, bidding him observe, as he passes in front, some admirable copies in marble of Canova's works,

TOP OF THE LAKE—GROUNDS OF NORTON HALL.

purchased by Mr. Cammell in Florence, and which appropriately find a resting-place here, as also a number of beautiful and interesting objects brought from Alton Towers, that raree shop of precious *bijoux* now dispersed far and wide.

On entering the Hall, we observe some choice specimens of marble statuary, likewise brought from Italy, which are pleasing records of the refined taste of the proprietor. Mr. Cammell has evinced his love for the fine arts by many instances of a kind and liberal spirit. Among his collection of paintings are four large marine pictures, painted for this gentleman by J. W. Carmichael, and which will please the visitor. In all *minutiæ* of detail, these pictures satisfy the most critical nautical eye, inasmuch as they represent every variety of craft that sails on our waters; comprehending not only examples of the different rates and classes in Her Majesty's service and in our mercantile marine, but also every description of vessel employed in yachting. The subject-matter is thus divided: "Vessels in Her Majesty's Service," "Vessels in the Merchant Service," "Steam Ships," and "Yachts." The two latter subjects are completed, and of these we more immediately speak. In the steam-boat composition, the two prominent vessels are a screw and a paddle-wheel, both of the largest class. The screw-vessel presents her clear broadside, and is placed sufficiently near to show the minutest objects of her exterior fitting and equipment, and even the least significant item of her cordage. This vessel describes one of the largest of ocean-going steamers as they now exist. It is sufficiently evident that nothing short of the labours of a lifetime in this department of art could ensure results so entirely satisfactory.

From this apartment we enter, on the left, the large and sumptuously-furnished *Drawing Room*, measuring thirty-six feet in length and twenty-four in breadth. On the right of the Entrance Hall is the *Dining Room*, of the same dimensions as the last, and displaying the same elegance and good taste. The *Library* contains a valuable collection of books, and is further enriched with a series of marble busts of the most eminent literary men of our country. It is intended to attach a conservatory to this apartment, which will be one hundred and fifty feet in length, and will form a most valuable adjunct to this portion of the building.

The wine cellars are remarkably extensive.

TOP OF THE LAKE—GROUNDS OF NORTON HALL.

g through the grounds of Norton Hall, we reach the church
r leading from thence. The structure, dedicated to St. James,
several monuments, among which is an altar tomb to the
of the parents of John Blythe, Bishop of Salisbury, and Geoffrey
Bishop of Lichfield, both which prelates were born here. But
e derives its chief illustration from being the burial-place of
sculptor, Sir Francis Chantrey, who died Nov. 25, 1841, aged 60.
olland, in his "Memorials," alluding to the interment, says—
ching Norton, I found the ponderous stone covering of the
d an under-slab, likewise very massy, and simply inscribed 'the
Sir F. C., 1840,' had been removed; and the crypt itself, a
tewashed apartment, capable of containing two large coffins
or, already opened. This spot, selected and prepared by the
as his last resting-place, is at the south-west angle of the
ear the base of the tower, and adjacent to the private door to
bery of Norton Hall. A few yards from the grave stand two
rchyard objects—a noble yew tree, and a pyramid of steps,
broken shaft of an ancient cross; the venerable ivy-covered
Norton House rising at the distance of a few score yards;
r still, the quiet, respectable parsonage." The grave is of
e, most firmly built about with heavy masonry, and covered
nderous slab of gritstone, inclosed by iron railing.

xious discharge of his filial duties led, in one particular, to an
hundreds of persons have sadly regretted—the almost entire
ction of the house at Jordanthorpe—including, especially, the
which the great artist first saw the light; so that visitors from
e saw, instead of an ancient thatched cottage, a very convenient
n-house, evidently built only a few years since. Chantrey was
tached to the place of his birth. Prevented by numerous
on his time from making frequent visits to it, he delighted not
alk of it, but he had it in his heart. Among other bequests, he
r the demise of his widow, fifty pounds a year, so long as his
lures, to be paid to a schoolmaster to instruct ten poor boys of
free of expense.

urch, through the liberality of Mr. Cammell, has been repaired
ified; a handsome stained-glass window has been presented by
dleman, and the chancel has been restored at his expense.

The vestry is modern, and contains two Service-books chained to a desk, although bearing the date of 1720. This imitation of olden watchfulness may be a sly satire upon the cheap literature of the day, against which our clerical warders have sounded the alarm.

On leaving the church, the visitor will observe the column raised to Chantrey, and bearing simply the name of the immortal sculptor.

We cannot quit Norton without noticing the improvements everywhere visible in the village, due to the owner of Norton Hall, who has shown his liberality, also, in providing employment for the poor, and encouraging, in every possible way, habits of industry and perseverance among his work-people.

In August of last year (1860) a magnificent *fête* was given by Mr. Cammell to his managers, clerks, and workpeople. The *Sheffield and Rotherham Independent* thus describes this important event :—

"Fete at Norton Hall.—We have often had to record the festivities that have taken place in connexion with our various manufacturing establishments, but none of them have equalled in magnitude and liberality of spirit the entertainment given on Saturday, by Charles Cammell, Esq., of the Cyclops Steel and Iron Works, to the *employés* of the great concern of Messrs. Cammell and Co.

"When it was known that the fiftieth anniversary of Mr. Cammell's birthday was approaching, the *employés* of the Cyclops Works determined to mark the occasion by paying a worthy tribute of respect to Mr. Cammell; and he resolved to afford himself the gratification of entertaining them in his park at Norton Hall, on such a scale of liberality as only large-hearted men can devise. To carry out the former design there was procured, from the celebrated manufactory of Messrs. Elkington, of Birmingham, a magnificent candelabrum and plateau of gold plate of the value of £500, to present to Mr. Cammell. On his part, he invited the whole establishment, with the wives and families of the men, to the number of nearly 3000, to a *fête* in his park.

"The testimonial presented to Mr. Cammell deserves especial notice. The beauty and chasteness of the design are remarkable. From a rock-like base rises a graceful date palm, in dead gold, its slender branches supporting seven lights. Around the foot of the tree are a lion, an antelope, and a giraffe, also in dead gold, and the whole candelabrum rests on a plateau, covered with plate glass, and elaborately ornamented with Moresque work. The brilliance of the gold in the Moresque ornament, aided by the mirror, throws up with great effect the dead gold of the candelabrum, and renders the *tout ensemble* of this splendid present everything that the most refined taste could desire. On the front of the plateau is a shield engraved with the arms of Mr. Cammell, and the motto '*Perseverando*,' a motto strikingly appropriate for the present head of the family. On the base of the candelabrum is a scroll, bearing the inscription which will be found in the address to Mr. Cammell. *The fact that such* a testimonial has been presented to Mr. Cammell by the sponta-

nous contributions of those in his employment, shows in a most striking manner the affection and esteem with which he is regarded.

"On Saturday morning all was activity in the neighbourhood of the Cyclops Works. A procession was arranged as follows :—

The British Flag.
Band formed from the workmen.
Flag of the Works, with the inscription 'Cyclops Iron and Steel Works,' and ornamented with the crest of Mr. Cammell.

Then came the men of the various departments, led by their managers,—

Mr. Sykes and the file department.
Mr. Sawyer and the steel department.
Mr. May and the joiners and coopers.
Mr. Hemingfield and the mechanics.
Mr. Pollard and the smiths.
The Norfolk Park Band.
Mr. Heselwood and the spring department.
Mr. Green and the men of the rolling mills, tilts, and forges.
Mr. Hammond and the iron department.
Mr. Hardy and the masons, labourers, &c.

As the procession marched through the town, the streets were crowded with persons to watch it. The Norton Hall *fête* was quite the event of the day.

"On reaching the gates of Norton Hall, the party found Mr. Cammell there to welcome them. The procession marched to the front of the Hall, where Mrs. Cammell and her family received it. The large silk banner was planted on the lawn, and the company formed a semicircle round the principal entrance to the Hall. The scene was most animating. Pleasure beamed on the faces of all, and hearty cheers testified how they appreciated the kindness that had prepared so unusual a treat. The bells of Norton Church rang merrily. The bands lent their aid.

"Mr. Cammell, who was greeted with cheers, said,—'My workmen and friends, allow me to bid you a most cordial and hearty welcome to Norton Hall. You are free to go where you like. I hope you will enjoy yourselves to your hearts' content, and that you will all contribute to each other's happiness. Now, my friends,' added Mr. Cammell, 'the park is before you, the music is at your service; do as you please ; and enjoy yourselves as much as you can.'

"At the dinner in the large marquee, Mr. and Mrs. Cammell, and their immediate friends, occupied the centre table, on which was placed the candelabrum about to be presented, and before and behind, to the right and to the left, were the rows upon rows of guests, who behaved with the utmost decorum. A blessing having been asked by the Rev. H. H. Pearson, Vicar of Norton, the meal began, and the substantial provisions vanished with wonderful rapidity before the steady onslaught of so many. Mr. Cammell, Mr. Wilson, and other gentlemen, were active in their endeavours to see everybody properly attended to, and with the aid of a staff of waiters, their efforts were crowned with success. The radiant face of Mr. Cammell showed how thoroughly he enjoyed the occasion, while his affability and kindness set all perfectly at ease, and rendered the entertainment most successful. The provisions were not only excellent, but superabundant.

"The loyal toasts having been duly honoured at the conclusion of the repast, the company left the marquee for an hour's recreation in the Park previous to the despatch of the real business of the day. The bands discoursed sweet music, and the guests enjoyed themselves in various games, and in admiring the beauties of the gardens and Hall, the magnificent scenery which the Park commands, and its majestic old trees, some of the finest in the neighbourhood. During this interval, Mr. Cammell moved about among his workpeople, ministering to their enjoyment, and speaking a pleasant word to all with whom he came in contact. He was everywhere hailed with delight, and the many groups with whom he mingled were evidently extremely gratified by his kind attention and affability. About four o'clock, it was announced that the presentation was about to be made, and the joyous assemblage crowded to the spacious marquee to witness the interesting proceeding. The candelabrum still stood in the middle of the centre table. Many were the exclamations of admiration of the exquisite beauty of the testimonial which their united contributions had enabled them to present to their esteemed employer. Mr. Cammell resumed his seat in the centre of the marquee, surrounded by Mrs. Cammell and the youthful members of his family, who were among the most delighted of the spectators. A numerous circle of private friends were also present.

"Mr. B. Sykes, the manager of the file department, read an address, and presented the candelabrum, which bears the following inscription :—

Presented to
CHARLES CAMMELL, Esq.,
of Norton Hall, Derbyshire,
and the
Cyclops Steel and Iron Works,
Sheffield,

By the Clerks, Managers, and the numerous Workmen in his employ, to commemorate the celebration of his Fiftieth Birthday, and in testimony of the high estimation in which he has been held by them as a Master and Friend during a period of Twenty-four years.

4th August, 1860.

"Mr. Cammell was received with protracted and enthusiastic hurrahs. He said :—

"'Friends, Fellow-Workmen, and Neighbours,—I am deeply sensible of the honour which you confer upon me, and in accepting your munificent present, I recognise as its chief value, the sentiments in which it originated. I need no assurance of your sincerity, for I have daily proofs of it in your earnest efforts to promote our common interests, and in the respect and good feeling that greet me on every hand.

"'Your address has touched upon topics most grateful to my heart. I do unfeignedly recognise the goodness of Providence in signally crowning my efforts with success, in granting me health to enjoy the fruition of my designs, and energy of body and mind to prosecute my labours, for the benefit of my family, and, I *trust*, of all who are associated with me. Above all, I rejoice that I am deemed *worthy to receive such tokens* of affection and esteem as you, my fellow-labourers

and my friends, have given me this day in the presence of those most dear to me, and I pray that we may yet be spared for many years, to promote each other's happiness, and to enjoy the consciousness that we are doing our duty to our families and our country.

"'Your inscription reminds me that twenty-four years have elapsed since I first stood in the relation of employer among you. During that period your numbers have increased a hundredfold; and should we be spared for a few years longer, I have reason to hope that our strength may be much more augmented. The rapid growth of the commerce of this country, which ministers to the wants of mankind in every quarter of the globe, affords unbounded scope for capital and labour, when directed by intelligence and skill. It has been my aim to bring to bear upon our various occupations all the aids of modern science, and I see in the progress we have made only an opening to still greater enterprises and successes.

"'With gratitude for the past, and indulging these hopes for the future, I reciprocate from my heart all the kind sentiments you have addressed to me, and wish you the full realization of the highest and most enduring blessings.'

"Mr. Wilson, who was received with cheers, said:—'We have pleasure in seeing Mr. Cammell among us in perfect health, and of presenting to him this most handsome testimonial. We have wished him every blessing that language can express, but not more than he deserves. Join with me in wishing health, happiness, and long life to his most worthy lady, Mrs. Cammell, and to her amiable family. I see around me many fathers—I can tell them by the affectionate glances of their eyes,—many mothers whose hearts beat warmly, many loving brothers and sisters; and all, I am sure, will join me in wishing health, long life, the most perfect happiness to Mrs. Cammell and her family; and in combining with that wish the sincere hope that her amiable children may all be spared to bless her declining years, and may not only adorn the family to which they belong, but may follow in the footsteps of him to whom to-day we have met to do honour. Give three hearty cheers for Mrs. Cammell and her promising young family.'

"Mr. Sykes then proposed three times three for Mr. Wilson, stating that the managers of the different departments had frequently to consult Mr. Wilson on matters of business, and a more courteous and gentlemanly man no foreman ever met with.

"Mr. Wilson made a suitable reply.

"Mr. Cammell, in a most eloquent speech, gave the health, happiness and prosperity of the managers and work-people at the Cyclops Works.

"Racing and dancing followed the presentation. The cannon on the lawn being fired rapidly, the bells of the old church of Norton, close to the Hall, ringing a merry peal, the sun shining brightly, and with such surroundings as these, how could the beautiful lawn fail to present a most charming scene? The dancing was kept up till nearly eight o'clock, when the guests began to take their leave, amidst renewed thanks, in the form of repeated cheers to their generous host. By nine o'clock the whole of them had left, and this day of enjoyment was a thing of the past, with the pleasing reflection that all had gone off well, and that in the vast concourse which had assembled, nothing had occurred to mar the general pleasure."

Leaving Chesterfield Station, on the North Midland Railway, we pursue our route to Rotherham, which we reach at fifteen miles and three-quarters' distance from Chesterfield, and forty miles from Derby.

ROTHERHAM, a considerable town, about one mile distant from the Masborough Station, on the Midland Railway, is situated near the junction of the Rother and the Don. Formerly it was a seat of learning, and had a college founded by Thomas Scott, Archbishop of York, but scarcely anything remains to tell of its ancient ecclesiastical celebrity, except the magnificent old church, dedicated to All Saints, which stands out in bold relief amidst the tall chimneys surrounding it, and which have so defaced this once classic ground of Ivanhoe. Richman, in his "Styles of Architecture," calls this church one of the finest perpendicular churches in the North; its execution is very excellent, and the design in every part is very rich; it is also in very good preservation. It is a large cross church, with a central tower and spire; these are fully enriched with panels, canopies, and crockets. The whole of the buttresses are panelled, and with

ROTHERHAM CHURCH.

crocketed canopy set-offs; almost every door and window is richly canopied, and there is an appropriately enriched south porch. The windows are all good, perpendicular, with the exception of two or three poor (perhaps renewed) ones in the chancel. The interior is very lofty and spacious, the piers and arches with very good mouldings, and the original roof of the nave (a flat wood one) remaining; it is one of the best compositions of the kind, plain, but rich from its good proportions and excellent ornaments. There are some tolerable perpendicular monuments and some peculiarly good screen-work.

On the whole this church deserves the most attentive examination, both as to its composition and most of its details.

Besides its noble church there are several dissenting places of worship, an Independent College in Masborough, a branch of the Young Men's Christian Association, a large, handsome Literary and Mechanics' Institute, a Savings Bank and Almshouses, and other charitable institutions.

There is a weekly market held on Monday for corn and cattle, and one on Friday for butter, eggs, and poultry.

There are two fairs held annually, the one on Whit Monday, and the other on the first Monday in December.

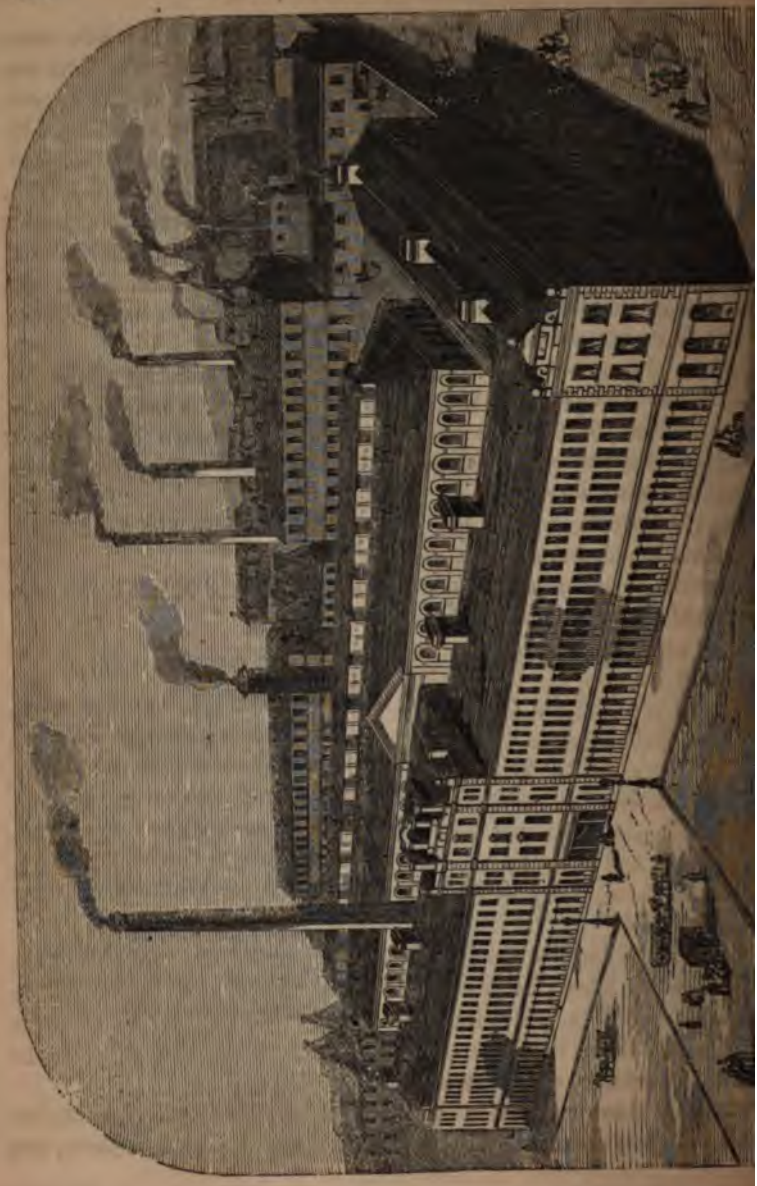
THE COMMERCIAL ASPECT OF ROTHERHAM.

Rotherham, with its adjacent suburb, Masborough, has, for many centuries, been the seat of the manufacture of iron; even as early as 1160 Richard de Busli granted land in the neighbourhood to the monks of Kirkstall, for the erection of iron-works for smelting iron and making into bars. Subsequently the Walker family founded great iron-works here, the products of which were, Southwark Bridge and many of the cannons used in the American war. But though the Walker family are extinct in the neighbourhood, yet this one firm has been followed up by many others; and the manufacture of stove-grates in elegant design, used for the palaces of the nobility, together with the railway wheel and other branches of the iron trade, are most extensively carried on in the town and vicinity.

The Effingham Works.

Cast-iron Manufactures of Yates, Haywood, and Drabble.

The pall of smoke over the town and valley announces that we are



approaching another seat of black industry. Rotherham has an ancient fame for its metal work. Here wrought the cunning artificers in the Middle Ages, when the knives and tools and weapons of the place had a value that has belonged to them ever since; and here, surrounded by mineral treasures in profusion, and in the midst of a hardy race, to whom the mine, the forge, and the foundry are what the sea is to a coast population, the Messrs. Walker founded a modest establishment in the middle of the last century.

Their works increased rapidly; the neighbourhood prospered with them; and their long career of success culminated in the manufacture, in the year 1820, of the great iron bridge that spans the Thames at Southwark, then considered almost one of the wonders of the world. They were succeeded in the ornamental castings business by Yates, Haywood, and Drabble, the present proprietors of that imposing pile of buildings, the Effingham Works, who have recently added, to what was almost a town before, a solid three-story edifice of about the length of the Great Eastern steamship, and a foundry to match. Truly this is one of the signs of the times; progress, not step by step in the manner of our fathers, but at the pace at which Old England is striding before the world.

And what do such colossal manufactories suggest? They tell of increased comfort for the people of the country; they make us sure that their products are becoming less and less costly, by the application of all available means to reduce labour and economise material; and they offer unequivocal testimony to the growing wealth of the nation; for who can see the multitude of beautiful grates and iron-work of all sorts of elegant forms that issue from the gates of the Effingham Works day by day and year by year, without wondering where there can be consumers for so many articles calculated by their nature and material to last so long?

But there is another remarkable consequence of the vastness of the scale on which these manufactures are conducted, that cannot fail to produce an effect on the æsthetic education of the masses; we mean the lavish expenditure that this enterprising firm is able to make on the artistic department of their works.

The total quantities are so great that a very heavy outlay for design falls but lightly on each article; so that, however simple a thing may

for whatever humble uses intended, it is sure to bear a graceful and to cost no more for it; while for objects of luxury the ations and contrivances are so full of variety as really to embarrass oice.

m these dusky workshops are furnished the peer's drawing-room he peasant's parlour, the church, the hall, the ship, the kitchen, and attic, with stoves, either plain, solid, and useful, or simply ented, or delicately finished and exquisitely adorned; and what- house wants for its outside or its inside, that is made of cast- is produced by the long-trained skill of the 500 workmen who their swarthy arms in these long ranges of shops and sheds.

a visitor, who wishes for information about metal manufactures, these interesting works: amidst the whirr of wheels, the roar of rnace blast, the screech of files, the dull thud of the sledge upon d iron, the frantic rush of the bearers of molten metal;—all appears sion, but the most calculating order prevails. Every man knows rk and does it. In the Foundry they are lifting from the sand dsome park gate, or a sheet of ornamental fencing. Strewn around ountless castings for sanitary purposes, and great piles of un- ntable-looking things that all belong to some article familiar h when put together to form a whole. The stranger notices how r-stoves of every construction abound; they appear to be a great of manufacture here. A bit of a fender here, the case of an air- the back of a chair, part of an umbrella-stand there, a range, a r, a kitchen hot-plate, show him the sort of goods that grow into at the Effingham Works. It will delight him to see a few pounds g iron of the intrinsic worth of not many pence, melted, fashioned, manipulated till some gorgeous fender or elegant hat-stand, or other piece of modern house furniture of many pounds' value, is ced. He sees goods whose value lies almost wholly in their t as mere material, and other goods that are what they are only much skilled labour has been expended on them. He watches the l casting of ormolu for stove and fender ornaments, and sees it d afterwards. Then he admires the richness of its colour; it like goldsmiths' work.

ey are taking something out of a large bath—it is a beautiful ng that has been electro-bronzed. He follows it to see what

becomes of it, and finds plenty more under the finishers' hands—they cannot be distinguished from castings of real bronze.

Looking into the Grinding Shop, he sees massive stones revolving with frightful rapidity, the workmen holding the metal surfaces against their broad edges. The turning, fitting, springing, blacking, and finishing shops each have his examination, and there is something to wonder at in all. The modelling department is the sanctum of the place; there the brain-work is done; there the staff of artists and their assistants give their ideas a concrete shape. It is little suspected how much patient thought and anxious effort is needed to bring to public use, in the most desirable and effective form, even a stove or range or fender.

He is sure to be pleased with the lithographic work. This house even makes its own pictures, for so large a quantity of illustrations is required to represent their manufactures to the trade, that the drawing and printing of them has an establishment for itself.

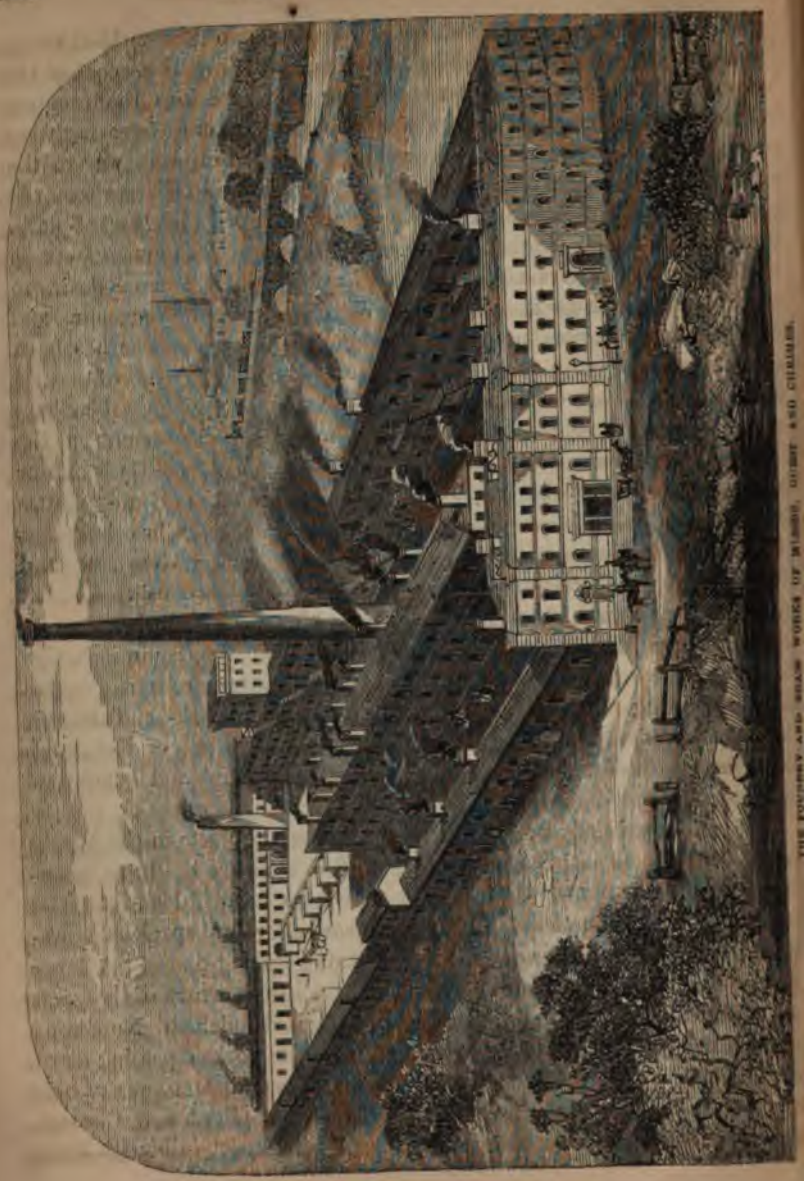
The visitor wants to see some results from all the labour he has witnessed, and passes into the show-rooms and packing-rooms to find them. There are some few of the finished manufactures, some register stoves and fenders glittering with burnished steel and ormolu, some raven black with faces like silk, some shining with homely blacklead; and a score of different sorts of the famous "Kitchener," some elegant tables, chairs, and garden seats, a few ashes pans, and other articles both useful and beautiful. But scanty indeed are the specimens displayed compared with the vast quantities made. They go away to every corner of the earth, but a large proportion is sent to the mercantile depôt of the house in London (Dyers' Hall Wharf, near London Bridge), where we are told a heavy stock is always kept, as that is the source from which the great demand of London is supplied, and where merchants and shippers apply to *see* the goods they want to buy.

We understand that Yates, Haywood, and Drabble import very large quantities of marble chimney-pieces to their London house. Of course they provide themselves with designs that are suitable to their stoves, and they think their friends find it convenient to purchase the whole suite of chimney-piece, stove, and fender together.

MESSRS. GUEST AND CHRIMES, FOUNDRY AND BRASS WORKS.

This manufactory was established in 1840, and has, like most of the large houses engaged in similar operations, increased with the progress of the metallic arts. The new Works shown in our engraving were erected in 1858, and are spacious and well adapted in every way to the object for which they were built. Messrs. Guest and Chrimes removed to their present premises from their former works in the Market-place. There are several peculiar features in connexion with the manufactures of Messrs. Guest and Chrimes. It has been their anxious desire to keep pace with the great extension of Water-works at high pressure, and with sanitary progress in general; and no labour or expense has been spared in bringing out and perfecting the most complete class of articles which can be produced for the purpose. Among the principal articles manufactured by Messrs. Guest and Chrimes we may mention the following:—Bateman and Moore's and Chrimes' Patent Hydrants or Fire Cocks, Improved Sluice Cocks, Chrimes' Patent High-pressure Single and Double Loose-valve and Screw-down Cocks, Pilbrow's Patent Water-Waste Preventer, Siemens' Patent Balance Water Meter, Bell and Chrimes' Patent Service Box Valve, and Guest and Chrimes' Registered Service Box. Fire-extinguishing Apparatus of every description, as hand or delivery pipes, jets, jet and spreader, to distribute water in imitation of rain; hose couplings; leather, India rubber, gutta percha, and canvas hose; coupling wrenches, &c. Sanitary Vessels, Wash-hand Basins, Urinals, Closet Pans, Plug Basins, Hoppers, &c. &c., of Ridgway's and the best Staffordshire make, and general plumbers' and gas-fitters' articles.

We will now briefly notice the more prominent objects in the Works of Messrs. Guest and Chrimes. On the first floor are the large SHOW-ROOMS for CHANDELIERS, containing numerous beautiful and tasteful specimens of these articles. Above the show-rooms are spacious Ware-houses, and adjoining are several Turning and Fitting-Shops. A large pile of buildings which the visitor will observe in the centre of the great quadrangle, is devoted to the manufacture of gas chandeliers. Numerous platforms connect the various departments of the works; passing down one of these we arrive at the WATER METER TESTING DEPARTMENT on the ground-floor. (We may observe that Messrs. Guest and Chrimes are large contractors for water-meters.) It is a strict rule with these



…tlemen that no goods shall be passed out the Works without having …n subjected to a test, in order that their strength and soundness may …uaranteed. From this department we proceed to another for testing …ce Cocks. In one of the fitting-shops we remarked a large collection …rning, boring, drilling, planing, and slotting machines of the costliest …ription; one boring-lathe was pointed out to us on our visit which …ost nearly *one thousand pounds*. Here may also be seen an enormous …elling crane. Pursuing our way from hence, we pass a chimney … of several) one hundred feet high, and arrive at the engine-house. …team-power used for the machines on the premises is nearly fifty-… From the engine-house we proceed to one of the MODEL-ROOMS, …h terminates our journey on one side of these colossal works. …ore us now are the cupolas of the iron foundries. Here the castings … made; adjoining, is a department for mixing copper and zinc for … The BRASS CASTING-SHOP succeeds, with twelve fires, and …ting are several other shops devoted to the same purpose. We … next the Bar-iron Warehouses, and pass the Coach-house, Stable, …e Warehouses for Castings. To these succeed the Smiths' Shop, …ight fires. To these succeed the STAMPING SHOP, where the …e, by the aid of steam-power, are made into shapes of the most …d pattern.

…have now traversed the vast quadrangle, and will just glance …at the great pile in its centre. The COPPER WAREHOUSES first …ur attention. These are joined by the POTTERY, where the … are made. To these departments succeed the DIPPING, …G, and BURNISHING ROOMS, and the stores for acids, lees, &c. …order is a large fire-proof department for spirits of wine, lacquer, …er this we enter the CARPENTERS' SHOPS, where the models …e, and the PAN-CLOSET and COPPER-BALL rooms for water-…Here, also, are Turning and Burnishing Shops. The visitor …t see CUMMES' HIGH-PRESSURE WATER COCKS, for which the …oms have a patent. In the Water-Meter Department, Siemens' …ted patent water-meters are made—a very valuable invention. …ning to the carpenters' shop, we enter a large department for …g the high-pressure cocks: this is joined by a shop in which …ers are made; also patent ball-cocks, plumbers' fittings, ferrules …r valve cocks, union joints, &c. In this *room* we counted seventeen

turning lathes. Besides the rooms we have mentioned, there are glass-cutting rooms, and other departments. On returning to the second floor, we are shown the GAS FITTING rooms; crossing the bridge we see huge stores for rough castings, brass tubes, &c. The finishing and packing departments conclude our brief glance at this manufactory.

About 300 workmen are employed, and a vast amount of work is done. The works are situated in the township of Brinsworth, in the parish of Rotherham. The proprietors of the works have a branch establishment in London, No. 37, Southampton-street, Strand.

THE ROTHERHAM IRON WORKS OF MESSRS. G. AND J. BROWN, MANUFACTURERS OF THE PATENT SOLID IRON TYRES FOR LOCOMOTIVE ENGINES, TENDERS, CARRIAGES AND WAGGONS, ALSO OF GENERAL FORGINGS, BEST SCRAP BARS AND RODS, BOILER PLATES, SHEET IRON, LIKEWISE ROLLERS OF CAST STEEL IN SHEETS AND RODS.

These Works were established by Messrs. Joshua Walker and Co. more than a century ago, which Firm attained very great celebrity for the manufacture of Malleable Iron, Cannon, General Castings, and Wrought Iron work. One of their greatest undertakings, however, was the construction and erection of the Southwark Bridge across the River Thames.

The above-named Works were used by Messrs. Walker for the manufacture of Malleable Iron only, but have since their day been considerably enlarged by the present Firm, who are the owners, not only for the manufacture of best qualities of iron, but also for the purpose of extensively rolling steel in sheets and rods in every variety of form and size, required by the trade of Sheffield, and for exportation. Since the introduction of Crinoline Steel for ladies' garments, Messrs. Brown have contributed largely in meeting the demand for that article, having for a considerable time past rolled not less than from 10 to 15 tons weekly.

The most remarkable productions of these works which were brought under our notice, were a number of SOLID IRON LOCOMOTIVE TYRES. By the aid of a Patent Machine for rolling them, Messrs. Brown have, after a long series of experiments during several years, and at great *cost in providing* the necessary appliances, been thoroughly successful

THE ROTHERHAM IRON WORKS OF MESSRS. G. AND J. BROWN.

in producing what has long been wanted, viz., a SOLID TYRE. We think it will be acknowledged this is a decided improvement over the ordinary way of manufacturing tyres for locomotive purposes, and will greatly tend to lessen the danger of railway travellers, for it not unfrequently happens that accidents occur by the failing of tyres at the welded part, which cannot happen by this mode of manufacture. As a proof that the Patent Tyres made by Messrs. Brown are appreciated, we may observe that considerable orders were in course of execution for England and the Continent at the time we visited the Works, and there can be but little doubt that Railway Companies will avail themselves extensively of so valuable an invention.

These Works were formerly driven entirely by water-power, the dam or head being derived from the sources of the Don and Rother. In all there are six water-wheels, equal to about 100-horse power, besides which there are now in addition four steam-engines at work, of a collective power of about 150 horses. Mr. Brown very kindly conducted us through the various Mills and Forges, explaining the purposes for which the different parts of the Works were used, and we left the Establishment with the full conviction of its being one of considerable importance.

From Rotherham is the Midland Railway to Sheffield (which town will be described in our succeeding pages): the main line leads by Darfield, Oakenshaw, Methley (where the Great Northern Railway communicates with Wakefield), to Leeds, a description of which town will be given in our Great Northern route. From Leeds, the Midland Line continues to Morecambe, by Skipton, Settle, Clapham, &c.

Leaving the Midland Railway, we will now return to

THE GREAT NORTHERN LINE

at Grantham, and proceed, *viâ* SLEAFORD to BOSTON, *en route* for LINCOLN.

Leaving Boston, at a distance of five miles north-west, we arrive at LANGRICK STATION. *Langrick Ville* stands on the north side of the river Witham, opposite the hamlet called Langrick Ferry. The former place was, with six other districts, created a township and chapelry, by *Act of Parliament*, in 1812, on the occasion of a very extensive drainage,

of about 14,000 acres of wild moor, and the eastern and western fens. The greater part of this property belongs to the Earl of Stamford and Warrington.

Traversing a flat, but well-cultivated country, the train reaches DOGDYKE STATION, about six miles from Langrick, situated on the banks of the Witham, about two miles south-south-west of Tattershall. The neighbourhood of this place was formerly a low marshy soil, but it is now well drained, and is highly productive.

TATTERSHALL CASTLE.
(From a photograph by Thomas Bolton.)

TATTERSHALL, the next station on the line, is about twelve miles north-north-west of Boston, and is a place of considerable interest from the

historical associations connected with its ancient castle, previously alluded to. It was erected about 1440 by the Lord Treasurer Cromwell, and became a formidable fortress, but was dilapidated in the wars between Charles I. and the Parliament. The part now remaining is one of the most perfect specimens of ancient brickwork in the kingdom, being a rectangular tower, 100 feet high, divided into four stories, and flanked by four octagonal turrets. It is raised on ponderous arches, forming spacious vaults, which extend through the angles of the building, into the bases of the turrets. The walls are of great thickness, and the windows are of the pointed order, well proportioned, and containing tracery.

On the moor, about five miles north of Tattershall, stand the ruins of a lofty tower, built by the same Lord Treasurer, as an appendage to his castle. Between the castle and the church is a small inhabited brick structure, which appears to have been erected about the same time as the castle.

The church is a beautiful and venerable cruciform structure, formerly collegiate, now in a state of dilapidation. There are stalls, piscina, rood-loft and brasses, with richly-stained windows.

The town is seated on the Witham, on which the Boston and Lincoln steamers run, and is at the mouth of the river Bane and Horncastle navigation. There are breweries, maltings, corn-mill, coal-wharves, &c.; together with almshouses, chapels, &c.

In the vicinity of Tattershall are *Scrivelsby Court*, the seat of the Dymokes, hereditary Champions of England; and *Haverholme Priory*, the residence of the Earl of Winchelsea.

Three miles and a half from Tattershall, we arrive at

KIRKSTEAD STATION, at the junction of the branch from Horncastle with the rails from Lincoln to Boston.

The village, which is about three quarters of a mile from the Station, is seated in the vale of the river Witham. It was anciently called *Cristed*, and was one of the manors bestowed by the Conqueror on his Norman favourites. The church is a small building, with lancet windows, and a beautifully groined roof. It stands near the ruins of an ancient abbey, founded in 1138, and now reduced to a lofty fragment of one of the inner walls, with part of an arch, which is distinctly seen *from the railway.*

At Kirkstead the *Branch Line to Horncastle* turns off, and about a mile and a quarter from the former place the train stops at

Woodhall Spa. The medicinal waters were discovered in 1820, and are said to derive their curative qualities from their impregnation with iodine. They are useful in diseases of the joints, palsy, rheumatism, disorders of the stomach, &c. A large hotel has been erected here, with extensive gardens and pleasure-grounds.

Near Woodrooffe Station we observe the old ruin known as *Moor Tower*, or the Tower of Moor, a singular octagonal building, with a winding staircase, supposed to have been a beacon for travellers through this part of the fen country.

About eight miles north-east of Kirkstead, we reach the terminus of the branch line at

Horncastle, a deanery, market town, and parish, seated in a valley at the foot of the hills called the Wolds, on the rivers Bane and Waring. It is irregularly built, and contains several public buildings. The town derives its name from an ancient Roman castle which formerly stood here, and is supposed to have been the Banovallum of the geographer Ravennas. Near Horncastle is the site of a maze, of Roman origin, long since effaced by cultivation.

Tanning constitutes the chief branch of trade; considerable business is also done in corn and wool; and from the situation of the town in a populous district, it enjoys a large retail trade. Three fairs for horses, cattle, and sheep are held annually. The first, which concludes on the 22nd June, has declined greatly. The second, which terminates on the 21st of August, has long been celebrated as one of the largest fairs for horses in the empire. It continues about ten days, being three days more than the time appointed by the charter. This fair is attended by purchasers from different parts of Europe, and even from America. The third fair is held on the 28th and 29th of October.

The church contains several monuments to the Dymokes of Scrivelsby.

Resuming our route from Kirkstead on the Loop Line to Lincoln, about two miles from the former Station, we reach

Stixwold Station. This ancient village, a greater part of which has been rebuilt, is pleasantly seated upon a fertile eminence, about half a mile from the Station, and overlooking the vale of the Witham.

Two miles and a quarter from Stixwold the train reaches

SOUTHREY STATION. This ancient village forms part of the parish of Bardney, from which it is distant about two miles south. The latter being also a STATION, and a place of some historical importance, merits a few remarks.

Though formerly surrounded by woods and swamps, but now by well-drained and fertile marshes, Bardney is supposed to have been occupied by the Romans; and is celebrated for its once extensive and richly endowed Abbey, founded before the year 697. Ethelred, King of Mercia, in 705, resigned his crown to become its abbot. In an adjoining meadow, known as *King's Hill Close*, is a barrow, to mark his burial-place. According to Bede, Oswald, King of Northumbria, was buried in the Abbey church; but his remains were removed to Gloucester in 909, excepting his right hand, which was retained by the monks, who attributed to it such miraculous powers that it drew to their Abbey hundreds of superstitious pilgrims, to whom they pretended that the hand was incorruptible.

The Abbey ruins have all disappeared. The parish church is a neat structure, consisting of a nave, with aisles, a chancel, and a well-built tower. In the chancel is a curiously-wrought tombstone, without any inscription, and a tablet in memory of a minister who died in 1778, and directed all his manuscript sermons (about 400) to be buried with him.

Half a mile from Bardney is *Bardney Hall*, J. Sharp, Esq.; two miles *Tupholme Hall*, C. Robson, Esq.; three miles *Stamfield Hall*, T. Greetham, Esq., &c.

About six miles from Bardney the train reaches

WASHINGBOROUGH STATION, three miles east of Lincoln.

Washingborough, a large village, is pleasantly situated upon the rising ground on the south side of the navigable river Witham, three miles east of Lincoln. This is a neat and well-built village. The principal landowners in Washingborough are Richard Coupland, of Skellingthorp, Esq., the Lord of the Manor, the Rev. Humphrey W. Sibthorp, Thomas Le Fairfax, and David Thornbury, Esq. The Rectory House is a large, commodious, stone-built mansion. Captain Bicknell, the chief constable of the county, inhabits a very comfortable newly-erected house, the property of — Coupland, Esq. At Heighington there are several *good houses*. The principal is the mansion-house of Charles Seeley,

Esq.; the residence of James Inman, Esq., at the west entrance of the town, &c. At Branston, two miles on the south of Washingborough, the ancient mansion and park formerly belonging to the Earl of Buckinghamshire, is now the property and residence of the Hon. A. L. Melville. Longhills, the residence of the Rev. Atwill Carters, Rector of the parish, is an excellent modern house, nicely placed in park-like grounds of considerable extent. At Canwick, a small village on the brow of the hill, two miles on the south-west, is seated the family mansion of Major G. F. W. Sibthorp, one of the representatives in Parliament for the city of Lincoln.

As we approach towards Lincoln, the flat scenery, to which the eye becomes familiar in Lincolnshire, disappears, and there is a succession of high hills, until we approach

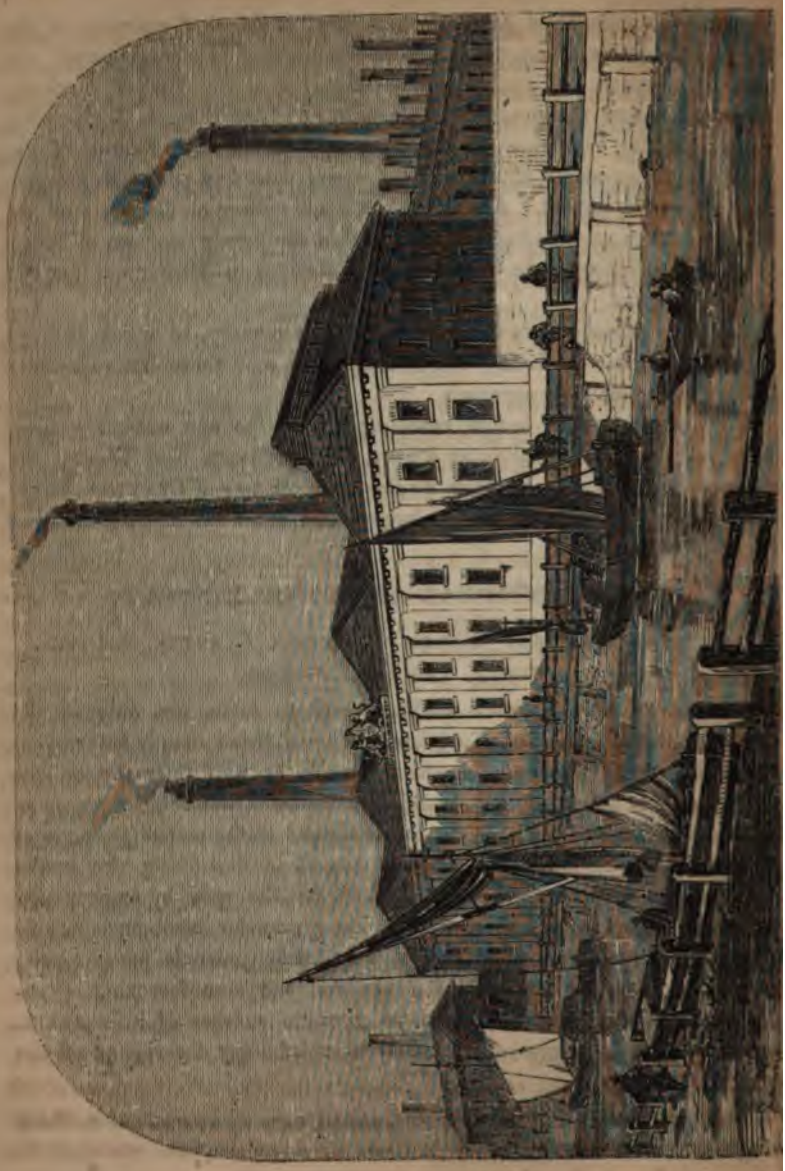
LINCOLN STATION, before reaching which, the eye naturally rests upon the cluster of buildings known as the Stamp End Works, the extensive and famous *Portable Engine Manufactory* of CLAYTON, SHUTTLEWORTH, and Co., one of the largest and most interesting works of the kind in the world.

THE COMMERCIAL ASPECT OF LINCOLN.

THE STAMP END IRON WORKS OF MESSRS. CLAYTON, SHUTTLEWORTH, AND CO., LINCOLN.

A visit to these colossal works, second to none, not only in the county, but in the United Kingdom, is one of those deeply interesting spectacles which no traveller who wishes to be well informed on the subject of our manufactures should omit to see. We have experienced much gratification from a recent inspection of the immense premises of Messrs. Clayton, Shuttleworth, and Co., and in describing the works we have had recourse to the notes taken on the spot by experienced writers. The place is one of world-wide reputation, and consequently most of our leading agricultural and scientific journals have opened their columns to accounts of the works and the manufacturing operations pursued in them. From these genuine sources of information, we are enabled to give our readers a satisfactory description of the works.*

* Among these we may mention the *Field* newspaper, *Bell's Weekly Messenger*, the *Dublin Weekly Agricultural Review*, &c.



isit to such an establishment as that of Messrs. Clayton, Shut-th, and Co., Stamp End Works, is eminently suggestive of the rful results already achieved through the progress of manufac- industry, as well as of the still greater social revolution yet ed to be accomplished through its instrumentality. While the business of the Stamp End Works is the production in almost us numbers of the Steam-engine, now justly regarded as the of manufacturing industry, in every department the Works them- supply perhaps one of the most remarkable illustrations of which untry can boast, of that successful combination of capital, skill, nterprise, which has given to Britain the vantage-ground among tions.

ature of interest in connexion with the Works which form the t of this notice is to be found in the circumstance that the en- there produced in such numbers are almost exclusively intended department of industry in which the power of steam has only ly been made available to any considerable extent. Towards the agriculturist in his operations, that power is now making strides, though the connexion between the steam-engine and the ss of husbandry is of very modern origin indeed. For thrashing, ng, and such operations, steam has for some time been available ny of the larger class of farms; but experiments and investiga- now in progress of being carried out, leave no room to doubt that e cultivation of the soil itself, as well as for the preparation of its cts, steam must become the motive power—not only conducing, marvellous degree, to the economy of production, but making the r, as it were, almost independent of the weather in the perform- of the primary operations of his business.

general use of the portable engine on large farms will lay the ation of steam cultivation. In short, without the portable steam- having first come into use on its own merits, the efforts of Mr. r to bring his steam plough under the notice of the agriculturist, Messrs. J. and F. Howard with their steam cultivator, would have low in producing any substantial results. The success of Messrs. on, Shuttleworth, and Co., in familiarising the leading farmers of the d Kingdom with the use and advantages of the portable steam- e must secure for that firm an honourable place amongst the ers of *agricultural progress.*

In a national point of view, the Stamp End Works have therefore claims to notice. Mainly confining operations to the production of fixed and portable steam-engines and thrashing machines, a degree of excellence and precision in the details of the manufacture has been attained, difficult if not impossible to arrive at where multifarious objects attract attention. The different parts of each piece of machinery being produced there by the hundred, under the most perfect system of division of labour, the most satisfactory guarantee is thereby afforded of each part being accurately adjusted, and adapted with the utmost precision to fulfil its appointed function; while those which may become injured by wear or accident can be replaced with promptitude and facility by any ordinary workman, by merely indicating the part required, and stating the number of the machine to which it belongs.

Situate on a branch of the river Witham, and forming, it may be said, a portion of the fine old and really beautiful city of Lincoln, the Works have the advantage of transit by water and by rail; a siding from the Manchester, Sheffield, and Lincolnshire Railway being carried into the premises. The raw material and manufactured goods can thus be unloaded or loaded from or into the barges or trucks at once. The buildings and yards occupy a space of over nine acres of ground; the plan of which is somewhat irregular, both from the locality in which the Works are situate, and from the circumstance of the premises being enlarged from time to time, to meet the requirements of a rapidly-increasing business. With the exception of the very elegant Offices at the entrance, there is no pretension to architectural effect throughout the Works, adaptation for the intended purpose, as regards construction and locality, being the primary consideration in the arrangement of the different departments. The BUSINESS OFFICES are on a scale of magnitude in character with the extent and importance of the operations of which they are the means of communication with the public. The branch of the Witham, of which the branch railway may be said to form a continuation, divides the premises into two unequal divisions, one of which is occupied by the offices, stores for finished engines and machines, thrashing-machine erecting shop, and wood-work generally; the other by the foundry, smiths' shops, turning, fitting, and store-rooms, and the apartments connected with the steam-engine department

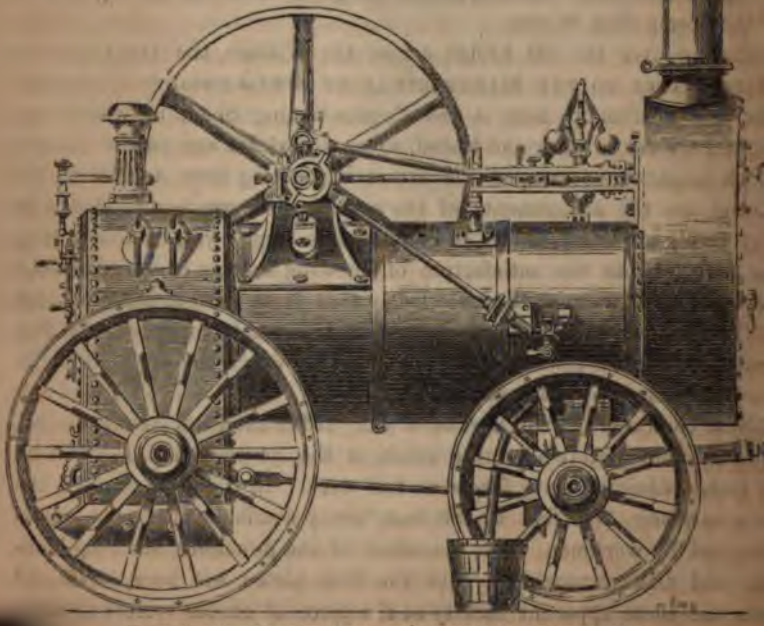
Commencing with the east side of the premises, after passing the offices, the THRASHING MACHINE ERECTING SHOP first attracts attention. This building, which is detached, is 320 feet long by 40 feet wide. The WOOD MACHINERY SHOP, 150 feet by 64 feet, presents every modern appliance for the construction of wood-work—sawing, planing, boring, tenoning, mortising, and other machinery, in almost endless variety; an inspection of which is highly interesting, as presenting at one view the results of the progress of invention in this particular department. The preparation of the wood-work is performed *exclusively* by machinery; manual labour being only employed in putting the several pieces together. The adjoining sheds for seasoned timber, and that for wheelwrights and frame-makers, are respectively 448 and 208 feet long by 20 feet wide. Everything here is on a gigantic scale—the huge piles of wood in store for future operations, the quantity of material prepared for the Erecting Shop, the number of machines in progress of fitting up, as well as of those ready for delivery—all exhibiting, in unmistakeable characters, the great extent of the operations at the Stamp End Works.

Passing over the lift bridge across the Witham, the DEPARTMENT APPROPRIATED TO THE MANUFACTURE OF STEAM-ENGINES is reached. The first apartment here is the Engine-testing Shed, in which the engines are set to work and tested, so as to exhibit any possible defect which might have escaped the fitters in putting them together. So correct are the adjustments of the several parts previously, that it is very rarely anything has to be done at this stage; yet, by this ordeal, the manager has the satisfaction of knowing that an engine does not leave the place without the knowledge that it is perfect and ready for work: a course of proceeding, it may be reasonably supposed, that has contributed much towards the high position which the productions of the Stamp End Works have attained.

Near the centre of this portion of the yard is the IRON STORE, 40 feet square; immediately adjoining which is the Smiths' shop, 178 feet by 80 feet, containing sixty forges at full work. In the same range is the BOILER SHOP, 231 feet by 80 feet, every available spot of which is occupied by workmen. The operation of the punching, shearing, rolling, and drilling machines with the iron plates, are here performed with the same apparent facility as if a piece of cheese were subjected

to their action. The clipping-machines, in fact, dress off the plate like common scissors dealing with a silk ribbon; and the rivet-holes are punched with as much apparent ease as the spectator would thrust his finger through a slice of butter. The *riveting* is done by a Patent Steam Riveting Machine, by which rivets are put in at the rate of 480 per hour; a great advantage over hand riveting, both in time and quality of work produced. By using only the best plates in the construction of the boilers, and putting them together in the most careful and substantial manner, a single casualty has not occurred through defects in any of those sent from these Works.

In close proximity to the Boiler shop is the FOUNDRY, 100 feet by 50 feet, surrounded by its appropriate accompaniments of oven, stove, mould-



CLAYTON, SHUTTLEWORTH, AND CO.'S PORTABLE STEAM-ENGINE.

ing benches, and fitting shop. In this, as well as in the BRASS-FOUNDRY, the whole of the castings are for the work of the establishment, no orders being taken for the public. It is, in fact, this *individuality*, if the term be allowed, that has secured the perfection of finish for which the Stamp End Works have become so celebrated. In every department the attention of the workmen is concentrated on, it may be said, a single object—a division of labour which can only be carried out with operations of great magnitude.

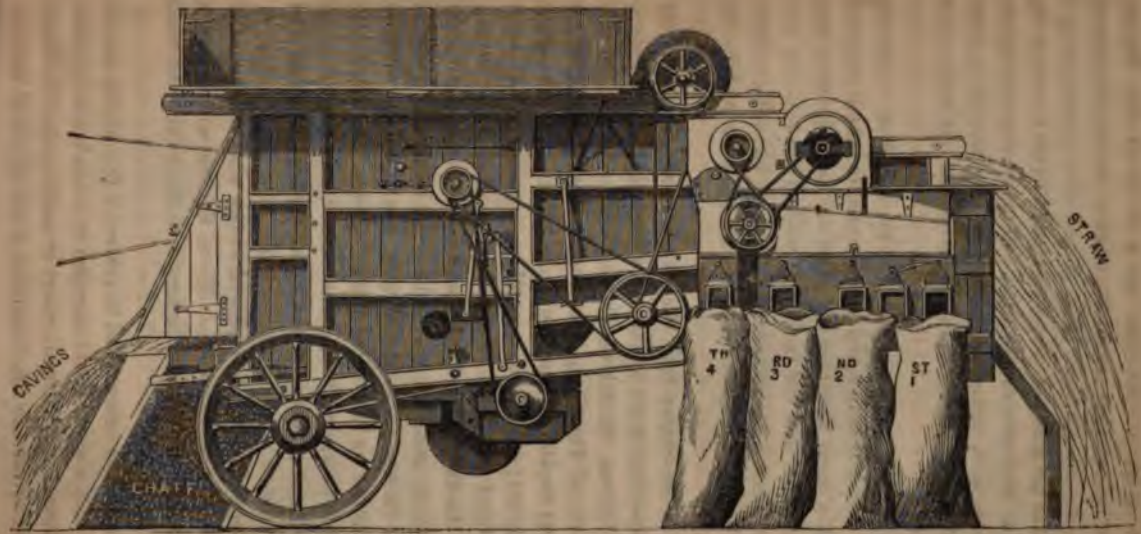
The TURNING AND ERECTING SHOP, 190 feet by 108 feet—(here the several operations to which it is devoted may be seen in active progress, the view of which has a most bewildering effect on the spectator, from the magnitude of the place, and the facility as well as the rapidity with which the most complicated operations are carried on)—REPAIRING SHOP, 90 feet by 40 feet; with stores of various kinds, complete this division of the works.

The rapid progress of the Stamp End Works has been already referred to; but this will be rendered more apparent by the following details:—

In 1849 Messrs. Clayton, Shuttleworth, and Co. first exhibited their portable Steam-engines and Thrashing Machines at the Norwich Show of the Royal Agricultural Society of England. In the year 1851 they sent out 140 portable Engines; in 1855 the number increased to 491; and during 1860 it extended to 550. Their engines are made from 4 to 20-horse power; the average in 1851 was 5-horse power; in 1855 it was nearly 7-horse power; and the demand for the larger-sized engines has continued on the increase. And not only has the fame of these engines become "familiar as household words" throughout the United Kingdom; it has also extended throughout central Europe, a single week not passing without a consignment being forwarded to the Continent or the colonies.

The average number of persons employed in the works is over 900, and the wages exceed £1,000 per week. These figures will convey an idea of the importance of such an establishment to the locality in which it is situate.

A walk through the works cannot fail to convey a favourable impression of the condition of the sons of toil engaged in manufacturing industry. Unless in the forging department, there is nothing approaching to what could be termed severe labour, requiring much physical exertion.



CLAYTON, SHUTTLEWORTH, AND CO.'S THRASHING MACHINE.

The employment is, in fact, rather *directing* operations than *performing* them; intelligent observation taking the place of the exhibition of force. Health and contentment are apparent on every countenance. The system of piece-work taxes ingenuity to the utmost on the part of the workman, so as by attention to increase production, and thereby add to the amount of wages.

The power required in the works is about 80-horse, by three fixed engines, besides the use of some two or three portable engines. The arrangements for ventilation are judicious and effective; for although

no attempt has been made towards attaining architectural display, nothing has been overlooked that could contribute to the comfort of the people employed.

So rapid has been the progress of the Stamp End Works during the past few years, that a limit can scarcely be assigned to its operations even a few years hence. The pressure of work at present is so great that orders are almost daily declined unless for distant delivery; but large numbers are willing to submit to this inconvenience, in order that when incurring the necessary outlay for a steam-engine or thrashing machine they can have the assurance of having an article the best of its kind, any doubt in reference to which would be miserable economy indeed.

After visiting the leading department of the Stamp End Works, a stroll over the open space will exhibit many objects; for instance, the tall and handsomely constructed chimneys, of which there are now three, which command your attention at a distance from the works, may be passed by when you are almost immediately at their base. These structures are composed of red brick, are octagonal in shape, and measure upwards of 120 feet in height. The feature of each chimney, however, which forcibly strikes the eye, is the simplicity of its outline and the enduring form which it displays. It has, properly speaking, no distinct base, being built up, like a Doric column, from the ground; but what may be called its base, is a curved extension, which resembles the bottom of a tree; and like the boulder of the latter, the chimney gradually and almost imperceptibly diminishes upwards to the top, which, like the entire column, is exceedingly simple. The huge crane is the next object to challenge your attention; suffice it to state that it is capable of lifting a weight of from 14 to 15 tons. As you wander onwards, strolling here and there into the by-ways of the establishment, you perchance perceive two or three men gently picking, or what is called "dressing," the surface of some huge stones, which are bound round the periphery with iron bands; these are intended for grinding purposes, and are made suitable for the flour-mills, for which the Stamp End Works are celebrated. Then we have the case-hardening of the wearing parts of the engines and machines; the operation of lagging the engine boilers; the packing departments; the testing operations, every engine and machine being thoroughly tested before it leaves the works; the painting-rooms; the repairing shops; the several

weighing machines, some of which are capable of sustaining 15 tons weight; the store rooms, which contain everything required for the manufacture of the Works, from the smallest screw and nail up to the most ponderous crank and wheel; and do not imagine, reader, that your course is unobstructed, for every spare piece of ground is covered with engines, machines, and parts of both these objects, some just going off, others just come in—to say nothing of the serrated ranks of iron wheels, newly finished boilers, and newly cast mills, and other fragmentary portions of machinery. Yet the arrangement of these is in excellent order, and the access to any part of the establishment is perfectly open and free.

The Crown Brewery, the Property of Messrs. Rudgard and Co.

The extensive premises, under the above designation, are situated in the parish of St. Swithin's, on the banks of the Witham. The buildings were re-erected, on a scale of greater magnitude, in 1856, and may be considered remarkably adapted to the purposes for which they were raised. The Brewery forms a conspicuous object from the railway, and comprises all the newest and best arrangements for brewing. Mr. Rudgard, the principal proprietor of the Crown Brewery, is a Maltster on a very extensive scale; he is also a Miller and General Merchant, having succeeded to the business established by his father in the last century. To give some idea of the enormous business transacted under his direction, we may mention that a sum of ten thousand pounds is paid annually to the Great Northern and other Railways for the carriage of goods alone, the firm being not only large sellers to the home trade, but exporters on a considerable scale to the most distant parts of the world,—to New Zealand, South America, &c.; the description of beer thus widely distributed being chiefly Pale Ale and Stout.

Our readers will have an opportunity of seeing how the national beverages (for ale and stout are essentially British, and without a rival in the world) are produced in this famous brewery; and should they be lovers of hop juice, they will have an opportunity of tasting some of the finest ale in the world at the Crown Brewery. The spectator will gaze with astonishment at the immense quantity of hops collected together on these premises; hops of the finest quality, large coned, and full

THE COMMERCIAL ASPECT OF LINCOLN.

BREWERY, THE PROPERTY OF MESSRS. RUDGARD AND CO.

of useful secreted and soluble matters. Of course, the superiority of ale depends upon the productive virtues of this plant. The best hops have a golden yellow colour, large cones, and an agreeable aroma; when rubbed between the hands they leave yellow traces, powerfully odoriferous, without any broken portions of the plant, such as leaves, stems, and scaly fragments. The best flavoured and palest hops are packed in sacks of fine canvas, which are called pockets, and weigh about 1½ cwt. each. *Malting* consists of three successive operations; the *steeping*, the *couching*, *sweating*, and *flooring*, and the *kiln drying*. All these and other processes may be seen on the premises of the Crown Brewery, carried on in a very expeditious and effective manner. The colour of the beer depends upon the colour of the malt, and the duration of the boil in the copper. The pale ale is made from the finest Saale and pale-dried malt, and the best golden hops; the deep yellow ale from a mixture of pale yellow and brown malt; and the dark brown beer from well-kilned and partly carbonized malt, mixed with a good deal of the pale to give body. The longer and more strongly heated the malt has been in the kiln, the less weight of extract does it afford.

The Crown Brewery is in great and deserved reputation for the excellence of its productions. The proprietors spare no cost, and use every exertion to keep the best ale and stout, and to use in making them the finest hops that can be procured. The sterling quality of the beverage is seen from the large supplies sent abroad, to long distances, without any deterioration of taste or strength—a tolerably good proof of their excellence. The highly sanative properties of the ale and stout made at the Crown Brewery recommend them also to all persons of debilitated constitutions. More invigorating and wholesome beverages could not be procured. We strongly urge our readers to pay a visit to this famous brewery; a model building, in every respect, of its kind.

The ales produced at the *Crown Brewery*, so highly and pre-eminently distinguished from all others, are strongly recommended by the Faculty for their invigorating and self-creating appetites, giving strength and tone to the stomach, and being an auxiliary to the dinner-table. They are necessary and essential to the aged and infirm, as also to those of strong constitution, &c.

The magnificent CATHEDRAL, seated on its elevated site, from which it is seen for many miles round, bursts upon the view with a grandeur that could hardly be surpassed. On the right of the line may be seen the ruins of the Blackfriars Monastery.

The view of Lincoln from the south, on the London-road, is particularly beautiful, comprising an open country, on the left; the valley of the Witham, with its silvery stream, on the right; and, in front, the city stretching from the level ground up the opposite hill, which is covered with houses and embowering trees. On the top of this eminence stand, in bold relief against the sky, the Lunatic Asylum, with its pillared portico and long front, the great ivy-covered keep of the ancient Castle, and the Cathedral. From many other points, Lincoln appears to great advantage, its towers being seen from the hills beyond Buxton and Derbyshire. From the *Promenade*, constructed on the summit of the hill, there is one of the most beautiful views that can be imagined.

The great Northern Railway Station is on the left hand of High-street, which is slightly scooped to the level of the line A few yards beyond is the ancient church of *St. Mary-le-Wigford*, and at the west end of this building is *St. Mary's Conduit*, a remarkably fine specimen of Gothic architecture, supposed to have been erected about 1307. There can be no doubt that the building was originally a chantry chapel.

From this point the view of the upper part of the city is very fine. Continuing our route through High-street, towards the Cathedral, we pass near the *Corn Exchange*, standing in an open square, a few yards down the street on the opposite side. The next object of interest is *St. Benedict's Church*, affording many evidences of Norman architecture, which will be viewed with interest by the lover of ecclesiastical antiquities. The building is small and unattractive; it is, however, of great antiquity, and its architecture bears evident traces of Norman origin, although the incongruities which are undoubtedly its chief characteristic, prove that the original building has been very considerably supplanted by the alterations and repairs which have been effected in the lapse of centuries. There is a beautiful window of the florid style, and many ancient monumental marbles on the floor, as well as a brass plate and effigies, in memory of a former resident of the city, bearing date 1520. Running parallel with the church,

on the left, are the extensive business premises and printing offic of Mr. E. R. Cousans, of whom the "Guide to Lincoln," as well a great number of views of the Cathedral and other places of loc interest, may be obtained, also one of the best newspapers in the count

ST. BENEDICT'S CHURCH, LINCOLN.

the "Lincoln, Notts, and North Midland Times," started in 1847, unde the title of the "Lincolnshire Times," now the property of Mr. Cousans In literary ability it takes first rank and in circulation is second to *onl one* in the county.

Crossing the *High Bridge* which spans the Witham, and on which i an obelisk, erected in 1763, we pass the *Independent Chapel*, and arriv at the *Guildhall*, which is also called the *Stone Bow*, of which a engraving is annexed, spanning the High-street, and considered one the finest antique gate-houses in the kingdom. The gateway is com posed of a large centre Gothic arch, guarded on each side by a roun tower. The whole is embattled and decorated with mouldings. In niche in the south-east tower is a statue of the angel Gabriel holding

small, and in the south-west one, another of the Virgin Mary treading
on a serpent. The interior was refitted in 1845.

En route to the Cathedral, the tourist will perceive several othe
objects of interest that our limited space will not permit us to describe
the *Monks' Leys*, an oblong piece of ground, occupying the hill side
and the *Monks' Abbey* ruins, picturesquely situated in the valley on th
left; the *Sibthorp Almshouses;* Lindum-road-terrace, from whence
magnificent view is presented of Lincoln and the neighbourhood
Fronting the spectator is the rural village of *Canwick*, and the seat o
the late Colonel Sibthorp, M.P. Having reached the summit of th
hill, the *Cathedral*, in all its pomp of architectural splendour and colossa

THE STONE BOW, HIGH-STREET.

proportions, stands before us, inspiring the beholder with wonder an
awe. The towers are amongst its finest external features. Those whic
surmount the west front are partly of the Norman time; the spires (
timber and lead) by which they were once crowned, about 100 feet i
height, were removed in 1807 from a fear of insecurity. The centre

Broad Tower, formerly known as the *Rood Tower*, is (rising from the centre of a church, and not having a spire) the loftiest in England. The lower part, to the foot of the great windows, is of the style Early English, about 1240; the upper portion is some sixty or seventy years later. The great windows belong to the *Bell Chamber*, where hangs *Great Tom of Lincoln*, recently re-cast; its predecessor hung in the north-west tower. The height of the Broad Tower to the vane on the pinnacle, is 268 feet 4 inches.

The *west front* of the Cathedral, in which the Norman style prevails, is a marvellous work of art. A very curious feature of this is the sculpture, the rudeness and quaintness of which have caused some persons to consider it as brought from some old Saxon church. Among the subjects of illustration may be observed, the Building of the Ark, Noah coming out of the Ark, Daniel in the Lions' Den, and the Angel driving out Adam and Eve; blessed spirits are seen ascending to heaven, while others are sinking in the Styx, and something like a Cerberus appears; friars and nuns are numerous, and serpents and monsters fill up the groups. These sculptures were also continued round the south angle of the Norman front, the Deluge being clearly portrayed. The north and south pinnacles of the west front are surmounted by statues. The southern one is the great prelate St. Hugh, of Burgundy, who rebuilt the Cathedral, about 1200; that on the north is known as the Swineherd of Stow, represented blowing a horn, supposed to be a sarcastic appellation of the notorious Bishop Bloet. Over the great western doorway, under canopies, are statues of William I., William Rufus, Stephen, Henry II., Richard I., John, Henry III., Edward I., Edward II., Edward III. Above is the large western window, with mullions and tracery.

Among the objects of interest within the Cathedral, beginning at the western entrance, may be mentioned *the Font*, which is very ancient, at least as old as the Norman church.

Opposite to this chapel, and on the south side of the nave, is the Bishop's Consistory Court, where visitations are held. The nave is remarkable for its magnitude and fine proportions; the breadth from wall to wall, and the height of the vaulting from the pavement, being alike eighty feet, and the total length from the west wall to the choir, *three times* the breadth, or 240 feet.

re the Civil Wars there were in the nave eighty-seven tombs, grave-stones, on the floor, but with some altar-tombs, as those alled which were raised. In the great transept, the two circular vs will be greatly admired. At the north and south ends of the pt are circular windows filled with stained glass. The great rose w in the north transept is said to be one of the most perfect works thirteenth century. The subject is the church on earth and the in heaven.

Galilee Porch opens from the south-west corner of the west pt. The *Rood Screen* has some exquisite workmanship on the entrances to the side aisles. The chapel opposite the Galilee is called *Humphreville's Chapel*. The choir contains sixty-two for the prebendaries. The Chancellor's stall is on the south side, he Bishop's throne. The wood-work of the stalls was pronounced . Pugin to be the finest in England, for design and workmanship. the south side of the chancel are the tombs of Catherine Swin- wife of John of Gaunt, Duke of Lancaster, and his daughter Countess of Westmoreland. On the north side of the chancel copied tombs, on one of which is an inscription to the memory of ins, the first Bishop of Lincoln, who is supposed to have been on this spot. These tombs also formed the Eastern Sepulchre, in the burial and resurrection of Christ were represented at that . The basements are sculptured with figures of knights leaning ir shields, intended for the soldiers who watched the sepulchre.

Cloisters were built about the reign of Edward I. One side has rebuilt, to support a Library. The Cloisters abound in curious stones removed from the nave and elsewhere, at the end of the last ry. The Chapter House is connected with the Cloisters. The s that of a decagon, with a central pillar composed of ten fluted ns of Purbeck marble, surrounding a stone pier, from whence the of the vaulting are carried to the angle of the walls. Near the r House, some remains of a Roman pavement were discovered in and are shown to the visitor. In point of effect, the east end of thedral, sometimes termed the Presbytery, is considered the most ng. The name of Choir of Angels has been often given to it, from xquisite groups of angelic figures playing on instruments, observed e spandrils in the arches of the Triforium. In the Chanters'

Aisle is a stained glass window, containing all the names of the Chancellors from 1092 to 1728. Beneath this window is the chapel called St. Catherine's, founded by Bishop Longland. On the cornice of the interior screen is the punning inscription on the prelate's name, "*Longa terra.*"

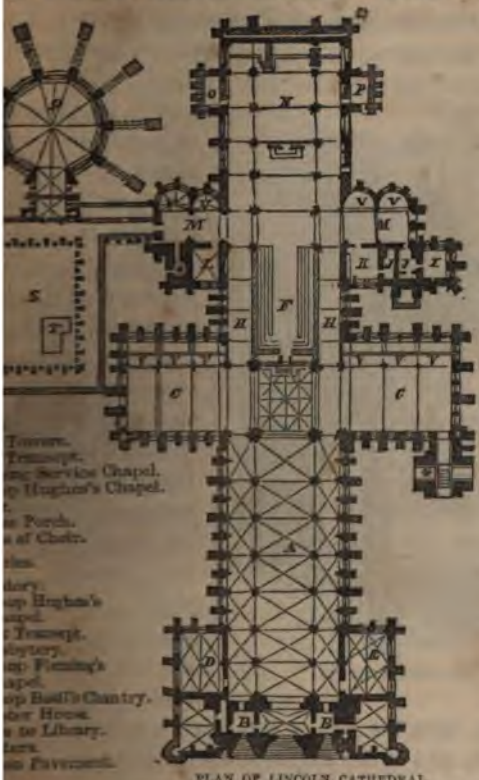
In the south-east porch, a magnificent portion of the building, there is a beautiful alto-relievo, descriptive of the Last Judgment.

EXTERIOR OF LINCOLN CATHEDRAL.

We must not omit to mention one of the greatest curiosities of the place, the Stone Beam between the western towers, composed of twenty-three stones of unequal lengths, but uniformly eleven inches in depth, intended, it is supposed, as a gauge to test the settlement of the towers, when their height was increased. The arch, or beam as it is generally called, is of that kind denominated the Catenarian, and is kept together by lateral pressure at each end.

The various chapels in the interior of the Cathedral are well worthy attention, containing some extremely interesting monuments, stained *glass,* &c. In the Chapel of our Lady, founded by Edward I., the

of his queen, Eleanor, were interred, beneath a cenotaph, with
ure of a queen, in copper gilt, reposing thereon.
he South Choir Aisle is a coffin, reputed to contain the bones of
fant St. Hugh, or little St. Hugh, a child who, according to the
ony of Matthew Paris, was crucified by the Jews of Lincoln, in
n of the Saviour, and afterwards interred in the Cathedral, as a martyr to the Christian cause. Formerly this shrine was exceedingly splendid, and traces of the colouring may yet be observed.



PLAN OF LINCOLN CATHEDRAL.

The Cathedral of Lincoln was founded by a Norman monk, Remigius, a follower of King William on his invasion of England. Enough of this building was raised to be ready for consecration in 1092, but it was left for his successors in the see of Lincoln, Bishops Bloet and Alexander, to complete the works. Of this Norman Church a small part only is left, comprising the
part of the West Front, already noticed.
Western Towers are also of this period, as far as the foot of the
Windows. In 1185, the great rebuilding in the lancet style
under Bishop St. Hugh, to whom we owe the Choir, East Tran-
and east side of the West Transept. His successor, Hugh de

Wells, completed, it is supposed, the West Transept Nave, a
enlargement of the West Front.

The Centre Tower was raised as high as to the foot of the
Windows, by the celebrated Bishop Grostête, about 1244; b
carried no higher till 1306. The raising of the two Western To
their present height probably belongs to the fifteenth century.
is little doubt that the east end, or Presbytery (beyond the
Transept), the most decorated portion of the fabric, was comple
1282. The edif
tained its highes
of beauty and per
about the com
ment of the fi
century. In 1540,
the Eighth stole
ounces of gold, an
ounces of silver, l
a great number
monds, offerings o
to the Virgin. In
Bishop Holbeach
Dean Hennage, t
lent zealots, relinq
the remaining tr
and partially or
pletely demolish
remaining tombs.
ing the Civil Wa
brass monument
scriptions were torn from the tombs, and the Cathedral was t
into a stable for the horses of the Parliamentary soldiers.

CHAPTER HOUSE, LINCOLN CATHEDRAL.

Of late years much has been done to restore this splendid build
its former beauty, by repairs and alterations, effected with great
and discretion.

The tourist who may remain some days in this old city of L
will find ample materials to gratify his curiosity. Independent
magnificent Cathedral to which we have directed his steps, h

tues in the ancient buildings which meet him on every side, the time honoured character and historic reminiscences with which Lincoln is so closely connected. On leaving the Cathedral, the modern residence of the Dean strikes the eye, with the dwellings of the Precentor and the Sub-Dean. Eastward, near the Palace Gateway, is the Chantry House of Nicholas, Lord Cantilupe.

The Palace ruin claims much interest, as the ancient episcopal residence. The last Prelate who kept up the princely state of the ancient Bishops was Longland, who entertained there Henry VIII. and Catherine Howard. A modern building, now occupied by the Secretary of the Bishop, has been constructed with the materials of the old palace.

CONDUIT, LINCOLN.
(*From a photograph by H. Edwards.*)

The *Vicar's Court* is close to the Palace Gateway, through an elegantly groined archway, and down a flight of steps. The long building below the quadrangle is called the Old Vicar's Stables. Near the east end of this place is a pointed archway, with a flight of stone steps leading to the New-road. The ancient east Roman wall and the Weredyke ran near to these steps.

Crossing the burial-ground of St. Margaret, near the Cathedral, two arches are seen; that on the south, spanning the road leading to the city, is called *Pottergate*, from the tradition of a Roman pottery having existed in that locality. Facing the Minster Green is the residence of the Chancellor, with an elegant oriel window, and adjacent are the Choristers' House, and an ancient house called the Priory. Passing through an arch near this latter building, we enter Eastgate, in which is *St. Peter's Church*, erected in 1778.

The entrance to Lincoln Castle (a fine old military fortress, erected by William the Conqueror in 1086, and destroyed during the wars of the Commonwealth) is by the eastern gateway from the Castle Hill. The county prison is here. The gate tower has been deprived of its roof and battlements, and is considerably lower than it originally was. It is a noble structure, with an elegant pointed arch, and massive battlemented superstructure; this part was not erected till the beginning of the fourteenth century. Within this arch are the remains of the old gateway built by the Conqueror. The Keep, which is of great strength, stands partly within and partly without the Castle walls, covering a high artificial mound and facing the valley. The walls enclose an area of about 1,790 feet, standing upon vast bulwarks of earth. The height of the walls varies from seventeen to thirty feet, and the breadth across their top is five feet, increasing in thickness towards the foundation; they were originally surmounted with stone battlements, five feet high and two broad.

Beneath the small tower overlooking the walls, on the top of which criminals are executed, is a place called *Cob's Hall*, supposed to have been a prison. The style of building is of the fourteenth century, and the interior consists of two stories of dungeons, with pointed arches. One is upon the ground-floor, and the other beneath, entered by a trap-door in the floor, and both are furnished with iron rings for the purpose of chaining prisoners thereto. The walls, within the last few years, have been restored.

The Castle turrets are of modern erection. They overhang the gardens of the County Club House. The walls enclose an area of six acres and a half. The mound on the inside is laid out as garden ground.

The prison is a plain brick building, enclosed within the ancient walls of the Castle, with the County Hall, a tasteful structure in the modern Gothic style.

John of Gaunt, "time-honoured Lancaster," made Lincoln Castle his summer residence, and built a winter palace in the southern suburbs, near the Gowts (go-outs) bridge.

Lincoln possesses several churches. Anciently the buildings for religious purposes were so numerous as to give rise to a proverb: "He looks like the devil over Lincoln;" because this city was supposed to *be the object* of his peculiar envy. Few now remain. *St. Paul's*, built,

of Norman architecture, and *St. Mary-le-Wigford*, in High-street, y mentioned; *St. Mark's*, a modern building; *St. Peter-at-Gowts*, lofty Norman tower: the interior is curious, and worth a visit; *tolph's*, a modern erection.

the Gates which formerly protected the entrances to Lincoln, we chosen for the subject of an illustration *Newport Gate*, which led the north entrance. In connexion with this Roman gate, d says: "The first building (in LINCOLN) was yn the very toppe hylle, the oldest part whereof inhabited in the Britons' tyme was rthethest part of the hylle, directly withoute Newporte Gate."

the grounds, of £15,000. Behind the asylum is the *Union Workhouse*, an extensive building for the poor of a district comprising eighty-six parishes. The *Penitent Females' Home*, situated on the brow of the hill immediately at the back of the *Union House*. The *County Hospital*, on Steep-hill, a plain brick edifice. The *Butter Market* and *City Assembly Rooms*, *Diocesan Institution*, *Grammar School*, *Blue-coat School*, *Mechanics' Institution*, *Chapels*, *Markets*, &c.

Besides the ancient monuments we have already noticed, are many which the visitor will observe with pleasure. On the Wragby-road, a short distance eastward, are some very ancient remains, called the ruins of St. Giles, an hospital founded by Bishop Remigius, for decayed priests. There is also the Roman arch already mentioned, and represented above, which spans the ancient Hermin-street, and the most perfect Roman gateway existing in England. The Roman station was founded at Lindum, in the reign of Claudius, about forty years after Christ.

Another Roman relic of great interest is the Mint wall, opposite St. Paul's Church, a vast angular fragment of stonework, thirty feet high and seventy feet long.

The *Jew's House*,—so called, it is said, from having been the habitation of a Jewess hanged for coin-clipping in the reign of Edward I.,—is a fine specimen of early Norman domestic architecture. The *Grey Friars*, the basement of which serves for the Mechanics' Institution, also deserves a visit.

The *Monks' Abbey* ruins consist of a few remains of a cell, or priory, which was attached to the Abbey of St. Mary at York.

Returning from the Cathedral, the visitor, whose impatience has probably hurried him through the town, in order to inspect at leisure its principal ornament—that wondrous relic of the skill of our forefathers—will now have time, probably, to observe the handsome shops which confer much respectability on the commercial aspect of the town. Among these, we have had occasion to notice Mr. Woodcock's Patent Medicine Establishment in High-street, which affords good evidence of a capacity to overcome "all the ills that life is heir to," if quality (not to omit quantity) of goods is the test. The good people of Lincoln may rest in security with such resources of a Galen at hand in case of need, and without any of the fears that analysing Dr. Hassall has

awakened among the Londoners for nasty drugs made more unwholesome still by art and trickery. From this point there is a good view of the High-street.

John of Gaunt's Stables are in the High-street. The building will be easily recognised from its Norman architecture. The palace of this famous duke stood nearly opposite. It is converted into two modern mansions, full of very beautiful sculpture and in excellent preservation.

The *Great Northern Hotel*, close to the station, is one of the best in the kingdom. It is now under admirable management, and deserves the support of the public.

BRANCH LINE TO GAINSBOROUGH.

From Lincoln, the tourist may proceed to Gainsborough by SAXILBY. The station is on the south side of the village, which is large, well built, and thriving. It is on the north side of the Fossdyke navigation. The church is a neat building, with a handsome tower. In the neighbourhood are *Thorney*, the seat of the Nevilles; *Kettlethorpe*, *Scampton*, and its Roman way, &c. The next station is MARTON, about a mile east of the village of that name. The Roman road, called Tillbridge-lane, crosses the north side of the village to Littleborough Ferry, where the Romans had a station on the Nottinghamshire side of the river.

In the neighbourhood of Marton is *Stowe*, with its Norman church and park, near Trent and Gate Burton. The ancient Saxon cathedral of Lindsey lies two miles from Marton station, a most curious and interesting building, commonly called "the mother of Lincoln." It was ravaged by the Danes about 870, and the see removed to Dorchester, in Oxfordshire, but again removed to Lincoln by Remigius in the time of the Conqueror. A portion of the Saxon work still remains.

On leaving Marton, we reach LEA STATION, two miles south of Gainsborough. The village is ancient, with many thatched and ivy-mantled dwellings, shaded with trees. The church is of Early English architecture, and consists of a tower, nave, chancel, and north-aisle. In the interior are several interesting monuments,—one supporting the recumbent effigy of Sir Ranulf Trehamton, a knight of the time of Edward I. There is also a mutilated alabaster tomb of Sir Thomas Burgh, the lord of the manor, and his lady. Lea Hall, the seat of Sir H. Anderson, in the vicinity of the village, is in a low situation.

It is an ancient structure, with sylvan pleasure-grounds, but no architectural beauties.

About a mile east of the church is the supposed site of *Hevenynge*, or *Heynings Nunnery*, which was founded before 1180, for Gilbertine nuns.

On the site now called Hermit Dams, are the remains of fish ponds, and a small moated piece of ground, on which carved stones have been ploughed up.

In the neighbourhood of Lea is *Knaith*, where Sutton, the founder of the Charter House, was born; *Knaith Hall*, a seat of the Wyndhams of Cromer, and *Somerby*, the residence of Sir Thomas Becket, Bart.

About three miles and a half from Lea we reach GAINSBOROUGH STATION, eighteen miles north-west by north from Lincoln, and 148 from London. This Station, in connexion with the *Manchester, Sheffield, and Lincolnshire Railway*, from whence it communicates with *Nottingham, Derby, Leicester, Birmingham*, &c., also serves the *Great Grimsby and Sheffield line*, which runs from Great Grimsby through *Brigg and Kirton* to Gainsborough, thence by *Retford and Worksop to Sheffield*. The station is a handsome building, situated on Pingle Hill and overlooking the town. Gainsborough is among those inland river ports which have been injured by the railways, as much of the traffic which formerly found employment for its ships and boats now goes direct by rails, instead of passing down the Trent. Here is an Electric Telegraph Station, communicating with all parts. The town, which is situated on the Trent, extends nearly a mile and a half along the eastern bank of that river. It had so increased in importance as a river port in 1820, that a branch Custom House from Hull was established here, and its consequence as a commercial station was afterwards so much enhanced, that it was constituted a seaport, independent of Hull, in 1841. By means of the Trent, which is navigable to this port for vessels drawing twelve feet of water, Staffordshire, Leicestershire, Nottinghamshire, and parts of Lincolnshire, are supplied with goods from the London and northern markets, through the medium of this port and the railway.

The township of Gainsborough contains about 7,210 acres of land, including the hamlet of Thonock, a fertile district in which is *Thonock Hall*, the residence of the lord of the manor. The streets are well

pared and lighted with gas. The *Old Hall*, or *Manor House*, is a curious structure, forming three sides of a quadrangle, and occupying nearly half an acre of ground. A portion of this building has been converted into a market for the sale of corn, &c., and some of the apartments have been splendidly fitted up for Assembly Rooms, and this portion appropriated for the reception of the Mechanics' Institute. The Town Hall is a plain brick building. The church was founded and endowed by the Knights Templars about 1209. The tower is a fine specimen of the later style of English architecture, and contrasts strikingly with the modern part of the building, which was erected in 1748.

The church of Holy Trinity Church District stands at Southolme, and is a handsome cruciform structure, consecrated in 1843.

There are Chapels, a Grammar School and Infant Schools, Charities, Savings' Banks, Theatre, &c., at Gainsborough, with ship-yards, brass and iron foundries, breweries, mills, manufactories, &c. A handsome stone bridge of three elliptical arches, 328 feet long, spans the Trent.

In 1643, Cromwell, on his way to York, encountered a party of Royalists near this town, whom he defeated.

In the vicinity of Gainsborough is *Carth Hill*, which Cromwell occupied in 1643.

From Gainsborough, the visitor can proceed direct to East Retford, or return to Saxilby and take the Branch line from thence to the former place. Returning from the Lincoln and Gainsborough Loop Line, we we once more resume our journey upon the

MAIN LINE TO YORK.

Continuing from Grantham, we reach, through a highly picturesque country, the *Peascliff Tunnel*, 968 yards in length; after which we arrive at

HOUGHAM STATION, six miles and a quarter north-north-west from Grantham. The parish is in the county of Lincoln. It has a rectory and two day-schools. The Manor House of Hougham is an ancient moated building.

Four miles east of this station are the famous quarries of *Ancaster* stone, of which so many ancient edifices, in this and the adjoining counties, have been built. *Caythorpe*, in this neighbourhood, a hand-

some residence, rebuilt in 1824 on the site of the old hall, was constructed of this material. Near the lodge, in the park, is one of the oldest mulberry trees in the kingdom.

Three miles to the north-west is *Long Penington*, near to which are the vestiges of an entrenchment, where once stood one of the castles of the Mercian Kings. A little farther on the left is *Staunton Hall*, the residence of the Stauntons, hereditary keepers of Staunton's Tower, Belvoir, already noticed. On the right of the line are *Willoughby House*, *Sudbrooke House*, *Newton House*, *Fulbeck Hall*, and *Leadenham Hall*, the residence of the lord of the manor.

Three miles and a quarter from Hougham, we reach CLAYPOLE STATION. The parish is in the county of Lincoln, with a rectory and two day schools. Farther on the right is *Stubton Hall*, the residence of the Herons, lords of the manor; and on the left is *New Hill*. The large workhouse for the Newark Union is at Claypole. About two miles south-east of Newark is the village of *Balderton*, the church of which is remarkable for a curious Saxon porch. We now enter the county of Nottingham, and at the distance of nearly five miles we reach the NEWARK STATION. The town, which is of remote antiquity, contains a population, in 1861, of 11,563, against 10,930 in 1851, and returns two Members. The Castle, the chief glory of this place, was built on some ancient foundation, and hence called the *New Wark*. It was, at different periods, the scene of several remarkable events. In 1216, in the reign of King John, it was besieged by the rebellious barons, and resolutely defended until the arrival of that monarch. In the last year of the reign of Edward III. it was used as a state prison. In 1530 Cardinal Wolsey and his splendid retinue were accommodated here on their way to Southwell. In 1602, James I. visited Newark on his way to assume the British crown. In the subsequent reign of Charles I., this castle formed the principal garrison of the Royalists. The ruins of this castle stand close to the river, on a high bank, the area of which is of an oblong form, and, notwithstanding the demolition it has undergone, it still presents an august and imposing aspect. The north front is the most perfect part of the fortification, having a massive square tower at the north-east angle, and another in the centre of the elevation. Between these, in the principal story, and among some large windows, is an immense projecting window, anciently called *bays*

rs. Under the great hall is a most curious arched vault, or upported by a row of pillars in the centre, having loop-holes and

NEWARK, TOWN AND CASTLE.

ures towards the river. The keep, or prin-
wer, contains numerous apartments, in one
h King John died.
best view of this stupendous pile is from
th-west, the direction of the road from York.
Newark there were formerly two ancient
s, but one was destroyed during the Civil
The church of *St. Mary Magdalen* is one of
est and most beautiful parochial edifices in
dom; it exhibits portions in all the styles
ish architecture, and is a cruciform struc-
sisting of a nave, aisle, transepts, choir, and sepulchral
with a lofty western tower, surmounted by a fine octagonal
the base of the tower is Norman, and in the nave are two

Norman piers: the choir is of exquisite workmanship, with ancient stone and oak stalls elaborately carved; it is separated from the nave by a richly carved oak screen, some parts of which, becoming decayed, have been successfully imitated by iron castings. In this part of the edifice is one of the largest engraved brasses in the kingdom, in memory of Allen Flemyng, who died in 1361. The large east window is in the later style of English architecture, and the corresponding piers and arches of the nave and choir are unusually rich. There are some excellent specimens of stained glass in the windows. The altar-piece, the "Resurrection of Lazarus," by Hilton, was presented by the artist, whose father was a native of the town. The Library over the south porch contains a great collection of theological books, bequeathed by Dr. White, Bishop of Peterborough, and other donors. The organ was built in 1804, and removed to its present situation in 1814, since which it has been enlarged and improved.

In 1842 the old peal of eight bells was taken down, and a new peal of ten substituted at a cost of £412, exclusive of the old bells, raised by subscription; they are in the key of C, and the tenor weighs 33 cwt.

On entering this church at the great west door, the first object that particularly attracts attention is the beautiful ancient Font. The top or bowl is of modern construction, but the shaft carries the appearance of very remote antiquity. On that are represented the twelve apostles, in coarse carved work, and round its base there is an inscription very difficult to be deciphered. To an adjoining pillar is affixed the following inscription on a small tablet:—

"This font was demolished by the Rebels, May 9th, 1646, and rebuilt by the charity of Nicholas Ridley, 1660."

Turning from the font to the various parts of the church, the eye is attracted in every direction by monuments of stone, brass, and marble, of persons who are handed down to posterity for their good deeds and almsgiving, for their high standing in society, their wealth, or their fame in the battle-field. Many of these once beautiful monuments are nearly obliterated, and will soon be as those which they commemorate —no more seen on earth. Besides St. Magdalen's, there is a handsome new church and several meeting-houses. In the large quadrangular *Market Place*, it is said that Lord Bellasyse, when he defended the

town for King Charles I., drew up 10,000 men-at-arms. The *Town Hall*, a handsome structure, consisting of three stories for courts of law and public offices, and a large assembly-room, was built in 1805. There is a *Free Grammar School*, founded in 1530, with other seminaries and richly endowed charities. For a full description of this handsome town, we beg to refer the reader to "Dickson's History of Newark," and to the little Handbook now being prepared by Mr. Tomlinson.

Near the south-eastern extremity of Newark stands a light and elegant shaft, called *Beaumont's Cross*, erected by the Duchess of Norfolk in memory of Lord Beaumont, who was slain at the battle of Towton.

The *Beacon Hill* near this, now remarkable for its quarries of gypsum, was the scene of an action in 1643, between the Royalists, under Prince Rupert, and the Parliamentarians. Between Newark and Southwell, eight miles distant, is the field where Charles I., after the battle of Naseby, surrendered himself to the Scotch Commissioners. The readers of Sir Walter Scott's delightful fictions will remember the *Saracen's Head Inn*, as having been the resting-place of Jeanie Deans, on her journey to London, to obtain her sister's pardon.

Leaving Newark on the left, is *Kelham Hall*, and farther on *Upton Hall*, and at *Caunton*, the *Manor House*. On the right are *Winthorpe Hall*, *Langford Hall*, *Collingham Hall*, *Beaconsfield House*, *Beckingham Hall*, &c. Four miles on the Nottingham road is *Stoke Hall*. At *Rufford House*, near Ollerton, Captain Savile's seat, is some Elizabethan work, with family portraits, &c. Having crossed the rivers Dean and Trent, we arrive at CARLTON STATION, six miles and a quarter from Newark. This parish, in the county of Nottingham, is so called to distinguish it from Great Carlton, two miles distant. On the right is *Carlton Hall*, and on the left *Ossington Hall*, the residence of J. E. Denison, Esq., M.P., Speaker of the House of Commons.

Five miles from Carlton we reach TUXFORD STATION. This town is in the county of Nottingham, and is well worth the traveller's notice. It is anything but of modern appearance, having been partly rebuilt since 1702, when a portion of the old town was destroyed by fire. The church contains portions in various styles of architecture. In the interior is a rude bas-relief of St. Laurence on the gridiron, and beside

him a fellow blowing the fire with the bellows, while the executioner i apparently in the act of turning him. There are several schools in th town.

Two miles north, on the left, is the church of *East Markham*, a ancient structure, with a lofty embattled tower, and containing a monu ment to Judge Markham, dated 1409. On the right lies *Fledborough* and more distant *Thorney Hall*. Proceeding by the village of *Wes Markham*, is *Gamston:* the antique church has been recently wel restored, and was formerly rich in monumental brasses and ornaments About three miles from Tuxford we enter the *Askham Tunnel*, fifty-five yards in length, and shortly afterwards crossing the Chesterfield canal we soon arrive at EAST RETFORD STATION, seven miles and a quarte from Tuxford.

At Retford the Boston and Lincolnshire Loop Line joins the mai train, and proceeds to York. The Manchester, Sheffield, and Lincol Line also crosses here.

East Retford is situated about a quarter of a mile from the Station

ST. SWITHIN'S CHURCH, EAST RETFORD.

in a pleasant position, and is connected with West Retford by a bridge across the Idle. It is well built, and the open square, or *Market Place*, is surrounded by good houses. There is a handsome church at East Retford, of mixed architecture, recently enlarged and restored, with a lofty square tower, containing eight capital bells. In the interior, near the pulpit, are the remains of two clusters of pillars, with their bases and a fragment of the caps still remaining. The most curious piece of workmanship in the church is the font, supposed to date from

THE TOWN HALL, RETFORD.

the sixteenth century. We are told that the first organ the church possessed came from the Theatre at Newark, but the one now in use was built by Walker, of London, in 1842. Several of the monuments are somewhat ancient; the living is of very little value, and in the gift of Sir John Sutton. The porch, erected in 1852, at the south entrance of the church, is very handsome. There are excellent chapels in this town belonging to the Wesleyan, Independents, Baptists, Primitive Methodists and Wesleyan Reformers. The *Town Hall* was erected in

1755, in the place of the Old Moot Hall, of which no traces now remain. The *Sessions* for the northern division of the county are held here every alternate three months, in the large court-room, which is about 70 feet long and 25 broad. This room is occasionally devoted to other purposes. Adjoining is the Council-room, which contains good portraits of George II. and his Queen; this room is used by the corporate body of the town, who hold Petty Sessions here every Monday; it is also appropriated to the Grand Jury. The town was incorporated as a borough by King Henry III., and returns two members to Parliament. The *New Grammar School*, recently erected, is, as our engraving represents, a very handsome building, and credit-

THE NEW GRAMMAR SCHOOL, EAST RETFORD.

able to the town. The school was founded in the fifth year of Edward VI., for the instruction of boys and youths in grammar; for its support certain lands belonging to the dissolved charities of Annesley and Tuxford were left to the care of the old corporation, who wandered into the broad fields of litigation; but the war has ceased.

West Retford, an ancient town, has a handsome church with a tower, and an elegant crocketed spire. The Chesterfield canal, from the Trent,

passes through the parish. The old hall was formerly the residence of the families of Dedman and the Darells, from whom, by intermarriage, descended two queens of England, viz., Anne, consort of James II., and Anne, her daughter, who succeeded William III.

Drunken Barnaby, who travelled from London during the Plague, thus alludes to Retford:—

> "Hence to Retford, fish I fed on,
> And to the adage I had read on,
> With carouses I did trim me,
> That the fish might swim within me."

BRANCH LINE TO SHEFFIELD.

From Retford we will now conduct our readers to Sheffield, a distance of twenty-four miles, by the Manchester, Sheffield, and Lincolnshire Line. Eight miles from Retford, we reach WORKSOP STATION. The town, which contains a population of 8,369 in 1861, against 7,333 in 1851, is situated at the northern extremity of Sherwood Forest. It may be regarded as the capital of the district popularly called the *Dukery*, from comprising Worksop Manor, Clumber Park (described in our succeeding pages), and Welbeck Abbey, respectively the seats of Lord Foley, the Dukes of Newcastle and Portland. The manor, as our readers are probably aware, is held by the presentation of a pair of gloves at the coronation, a duty now vested in the Newcastle family. The church, standing on the eastern side of the town, comprises the western portion of the Priory Church (founded in the reign of Henry I.), and its towers form an interesting object in the view of the town. It is one of the principal remaining specimens of Norman architecture in the kingdom. The western entrance is under a beautiful receding Norman arch, with diagonal ornaments, and the towers which surmount it have Anglo-Norman, or circular and pointed arched windows. This church contains some interesting monuments, especially to the families of Furnival and Lovetot. The principal gateway to the Priory still exists, forming the entrance towards the church. Several other interesting remains of the Priory are seen near this. The other Stations on this line, SHIREOAKS, KIVETON PARK, WOODHOUSE JUNCTION, and DARNELL, do not contain anything worthy of particular mention. Near the last-named Station, on the left, are the Tinsley Park Collieries. At

the distance of three miles and a quarter from Darnel, we reach SHEFFIELD. We could say much of Sheffield, but our space is limited, and obliges us to be brief. This place is of great antiquity, and was formerly called *Sheaffield*, from its situation on the river *Sheaf*, near its confluence with the Don. It is the chief town of the extensive Saxon manor of Hallam, now called Hallamshire. At the time of the Norman Survey, the manor of Sheffield was held under Judith, niece of William the Conqueror, by Roger de Busli, and the widowed Countess of the Saxon Earl Waltheof, who had been decapitated for entering into a conspiracy against William. It came subsequently, with other estates, to the family of De Lovetot, the first of that family who owned the manor being supposed to have erected the ancient castle, which, with the lordship of Hallamshire, afterwards descended to the Earls of Shrewsbury, from whom the estate finally passed to the Dukes of Norfolk. Cardinal Wolsey, after his arrest in 1530, was detained in the Manor House here for eighteen days, in custody of the Earls of Shrewsbury; and Mary Queen of Scots was, with the exception of a few short intervals, held in captivity in the same place, or in the castle, for nearly fourteen years.

The town covers for a considerable extent the abrupt declivities, the gently sloping banks, and the boldly swelling hills, which rise in picturesque disorder near the conflux of the rivers Don and Sheaf, and are themselves encompassed and overlooked by such a proud amphitheatre of verdant hills that there is scarcely a street in the town from whence the country cannot be seen, nor an eminence in the vicinity that does not command a beautiful panoramic view of the town and suburbs. It holds a central situation between Hull and Liverpool, and Leeds and Nottingham, and is situated in the West Riding of Yorkshire, bordering upon Derbyshire. Its canal opens a communication with the Don and other great navigable rivers and canals, and its railways open a direct transit for passengers and goods to all parts of the kingdom. Population in 1861, 185,309, against 135,283 in 1851. The parish is coextensive with the borough, and abounds in wood and water, and in those important mineral bodies—coal, ironstone, gritstone, freestone, flagstone, clay, &c.

Sheffield possesses little to mark the opulence of its merchant princes, *but the neighbourhood*, which is remarkably picturesque and pleasing,

contains handsome villas and mansions, giving the character of ease and competence to the proprietors.

The public buildings are in unison with the utilitarian character of the place and people, more convenient than showy. The *Town Hall* is a spacious, plain building. The *Theatre* and *Assembly Rooms* are spacious; the *Public Baths* are very complete; the *Corn Exchange*, *Assay and Excise Offices*, are well adapted to their objects. Some buildings, however, have more pretension. The *New School of Art* lately erected in Arundel-street, is not only a handsome and creditable building, but it is, we believe, the first of any importance erected in this country for the special purpose of a school of design. It extends 133

NEW SCHOOL OF ART, ARUNDEL STREET, SHEFFIELD.

feet from front to back, is 47 feet wide in the front, 72 feet at the back, and contains the following accommodation:—on the upper floor, a gallery for casts, 69 feet by 39 feet, and 22 feet high; a painting school, a ladies' class-room, and head-master's room; on the ground-floor are the elementary class-room, the theatre, the library or council-room, the

geometrical class-room, the entrance-hall, &c.; on the other floors are studios, modelling-room, casting-shop, lavatories, &c. The edifice is designed in the Romanesque style, and is built in alternate bands of red and black brick; the cornices, columns, and other dressings being of stone. Over the upper range of windows are placed medallion portraits of Michael Angelo, Raphael, Titian, Ghiberti, and Christopher Wren. The effect of the whole building is particularly pleasing. The *Cutlers' Hall*, in Church-street, is highly ornamented, and has a stone front in the Corinthian style, with fluted columns, and four pilasters supporting a pediment, with the arms of the corporation. The *Music Hall*, or *Literary Institution*, in Surrey-street, a Grecian building, comprises on the ground-floor a room for the public library, 38 feet long by 35 feet wide; a museum, well worth a visit, and other apartments equally spacious and commodious. In the higher part of the structure is an elegant music-room, 99 feet in length and 38 feet in width, with a compact orchestra. The *Barracks*, to the north-east of the town, near the Infirmary, are adapted to contain two troops of cavalry, with parade ground. The markets are well supplied. The corn market is held in the Corn Exchange, a handsome building erected on the site of the Shrewsbury Hospital, at the expense of the Duke of Norfolk, in 1830. During the same year a new cattle market was opened. There are a Cemetery and Botanic Gardens; and Sheffield possesses several churches, besides places of worship for various denominations. The parish church of *St. Peter* is a Gothic cross of the age of Henry I., and contains the graves of the Talbots, who formerly held the manor. In the interior is a bust of the Rev. J. Wilkinson, by Chantrey, his *first* work. The new Presbyterian church of *St. Andrew's* is a handsome building in the geometrical style. It consists of nave, south aisle, tower spire (115 feet high), and school-room, with session-room over. The total cost was about £3,500. Accommodation is provided for 550 persons. The *Wicker Congregational Church*, also a new building, is a good example of consistent application of Gothic architecture to the requirements of a dissenting branch of religious worship. The building is a parallelogram, divided into a central portion or nave, and side aisles. There is accommodation for 1200 persons.

A charter of incorporation has recently been granted to Sheffield, which returns two members to Parliament. We have not space to

enumerate all the charitable institutions, schools, literary and scientific societies in the town; suffice it to say, that all the requirements that philanthropy can suggest, and zeal for popular education can promote, find ready and earnest supporters in Sheffield. The town has produced two poets of very different stamp, James Montgomery and Ebenezer Elliott, both remarkable for their genius. To the memory of Ebenezer Elliott, the Burns of the manufacturing districts, known to our readers as the Corn Law rhymer, a remarkably fine bronze statue has lately been erected, situated, as our engraving shows, in front of the Post

THE ELLIOTT STATUE.

Office. Ebenezer Elliott was born 1781, at Marsborough, near Sheffield; he fought his way from an humble position to an elevated one, entirely by his own ability and unfailing industry. We spoke of Elliott as the Burns of the manufacturing districts, but Crabbe appears to have been the model the poet most delighted to follow, though, like poor Clare, his love for poetry was implanted by reading, at an early age, "Thomson's Seasons." The great sculptor, Chantrey, was in his early days apprenticed to a wheelwright in this town.

Before leaving Sheffield, we ought to notice the liberal manner in which the Drinking Fountain movement has been carried out. Among these we may mention one in the wall of the Town Hall, and two close to the Midland Station at the junction of the road leading to the Cyclops Works, erected in 1860, at the expense of J. H. Sales, Esq.

There are numerous excursions in the neighbourhood of Sheffield. Up the Sheaf are Meresbrooke House, in Derbyshire, and Beauchief Abbey, of which we give an illustration. The ruins are situated in a beautiful little vale, near the northern boundary of Derbyshire, within a short distance of Sheffield. This religious house was founded by Robert Fitz-Ranulph, Lord of Alfreton, between the years 1172 and 1176, for regular canons of the Premonstratensian order. It was

BEAUCHIEF ABBEY.

dedicated to Thomas A'Becket and the Virgin Mary; and, from the former patron, has been erroneously supposed to have been founded in expiation of his murder. On the dissolution of this house, its revenues, according to Dugdale, were £126 3s. 4d. By the Baslow and Bakewell road, there is a pleasant ride to Beauchief. On approaching the wooded upland under which the ruins lie, the view of the surrounding scenery is very fine. At first the abbey has a lumpish and somewhat ungainly look. The tower is stunted and robbed of its battlements and pinnacles. The ruin has been patched up for a church for modern times. All the old grandeur is departed, but the venerable and the beautiful still remain. The ivy and the ash decorate the walls, and render them, mutilated as they are, picturesque. The abbey flourished

300 years; in 1536 the last abbot surrendered the house to the
rn. A century later, the buildings were in ruins, and the adjoining
uchief Hall was built in 1671 out of its fallen stones and timber.
ascending the hill which leads to Norton, and looking back on the
ey, a fine view is presented. The pretty village of Norton will be
famous as the birthplace of Chantrey, the celebrated sculptor.
father, a small farmer, died in straitened circumstances, and to
st his mother, Francis, then about twelve years of age, carried
k for sale to Sheffield. His subsequent career is well known.

BEAUCHIEF ABBEY BY MOONLIGHT.

THE COMMERCIAL ASPECT OF SHEFFIELD.

Sheffield has, from a very remote period, been famous for its manufacture of cutlery (in 1296, Edward I., it acquired great reputation for iron manufactures, especially for falchion-heads, arrow-piles, and an ordinary kind of knife called "Whittles"); the trade, however, was of very small extent indeed until the early part of the seventeenth century, when it began gradually to increase, and by an Act of Parliament passed in 1624, the cutlers of the liberty of "Hallamshire" (comprising the parish of Sheffield, and adjoining parishes of Handsworth and Ecclesfield) were formed into a corporate body. Even until the middle of the last century, the trade of Sheffield was still limited and precarious, but at that period various new branches of manufacture were introduced, more particularly that of plated goods. The art of silver plating, invented by an ingenious mechanic named Thomas Bolsover, was so extensively applied here as to be soon generally known as Sheffield Plate.

At Sheffield is manufactured a superior but more costly kind of white metal, called German silver.

The manufactures, branches of which are also

carried on in the villages in the surrounding country to the distance of about seven miles from the town, include all kinds of cutlery and plated goods—indeed of everything that can be fabricated of iron or of steel; edge tools, fenders, files, anvils, joiners' tools, lancets, inkstands, nails, snuffers, saws, scythes, hay and straw knives, sickles, shears, awls, bellows, and an endless variety of other articles of hardware; buttons, brushes, combs, and optical instruments are made here to a considerable extent, and various other manufactures which arise out of, or are connected with, the staple commodities of the town, such as cabinet-case makers, engravers, haft and scale pressers and cutters, powder-flask and shot-belt makers, silver refiners, wood-turners, &c. There are also several foundries for iron and brass. The manufacture of Britannia metal (a superior kind of pewter composed of tin, antimony, and regulus) occupies many hands; there are extensive works for the refining of steel; the vast buildings used for grinding by steam form one of the peculiarities of Sheffield. Of the artisans of the town, the spring-knife makers and the table-knife makers form the largest class. At Sheffield is also a minor manufacture of hair seating.

In the following pages, devoted to a descriptive account of some of the most eminent manufactories in Sheffield, our readers will find much valuable and interesting information.

The CYCLOPS Steel and Iron Manufactory of Messrs. Charles Cammell & Co.

One of the greatest industrial marvels of Sheffield is the Cyclops Steel and Iron Manufactory of Messrs. Charles Cammell and Co., *producers* on a truly colossal scale, of every description of steel used for machinery, engineering, locomotive, railway, and other purposes. This vast establishment comprises almost a small town of factories, the premises occupying an area of upwards of fourteen acres of ground, and affording employment to over 1200 persons, the amount of whose annual wages exceeds the revenues of many a foreign principality. The premises being intersected by the Midland Railway, within a few hundred yards of its Sheffield terminus, and having sidings and lines traversing every part of the works, merchandise is conveyed to and fro with great facility. After passing through an almost interminable succession of buildings occupied by swarthy workmen, engaged in their Titanic *operations, we arrive at a series* of very large buildings of more

ONE OF THE VIEWS

CHARLES CAMMELL & Co.

SOLE MANUFACTURERS OF THE PATENT PREPARED CAST STEEL & EVERY DESCRIPTION OF SPRINGS FOR LOCOMOTIVES CARRIAGES, WAGONS, &c.
MANUFACTURERS OF CAST SHEAR SPRING BLISTER & EVERY OTHER KIND OF STEEL & THE CELEBRATED IMPROVED CAST STEEL FILES

recent construction, consisting of rolling-mills, tilts, forges, and grinding-wheels; and here the mighty power of machinery in its most gigantic proportions will astonish the beholder. The rolling-mills are so extensive as to require the agency of a pair of engines which together exert the power of nearly 500 horses; there is also an engine of immense capability for driving grindstones and other machinery required for the general purposes of the trade, and additional engines of proportionate power for hammering, tilting, forging, and drawing. One of the leading articles of manufacture here is steel made by a process called cementation, which consists in filling a proper furnace with alternate strata of bars of the purest malleable iron, and powdered charcoal; atmospheric air is carefully excluded from the boxes containing the bars, and the whole is kept for many days at a uniform red heat. By this process, carbon penetrates and combines, in small proportion, with the iron, the texture of which, originally fibrous, becomes granular, and its surface acquires a blistered character. The malleability of steel falls far short of that of iron, but it is harder, and more sonorous and elastic, is susceptible of a higher polish, and has less tendency to rust. At a red heat, it admits of hammering into various forms, and of being welded or united, by blows of the hammer, to another piece of steel or iron. Blistered steel, rolled or beaten down into bars and rewelded, forms shear-steel; and if melted, cast into ingots, and again rolled out or hammered into bars, it forms cast-steel.

With these brief explanations, which to the majority of our readers will be superfluous, we will point out to their attention the great steam hammers. The absorption and action of the carbonaceous matter to about half per cent. occasions fissures and cavities in the substance of the blistered bars, which render the steel unfit for any useful purpose in tool-making till it be condensed and rendered uniform by the operation of tilting, under powerful hammers driven by machinery. The heads of the tilt-hammers for steel weigh from 1¼ lbs. to 400 lbs.

At a small distance from the tilt, stands the forge-hearth, for heating the steel. The visitor will here see with what remarkable precision and celerity a rude steel rod is stretched and fashioned into an even, smooth, and sharp-edged prism, under the wonderful operations of the tilt-hammer. Passing out from this marvellous exhibition of mechanical power, we enter a department where springs are manufactured for *railway purposes*, the strength and perfection of which are tested by

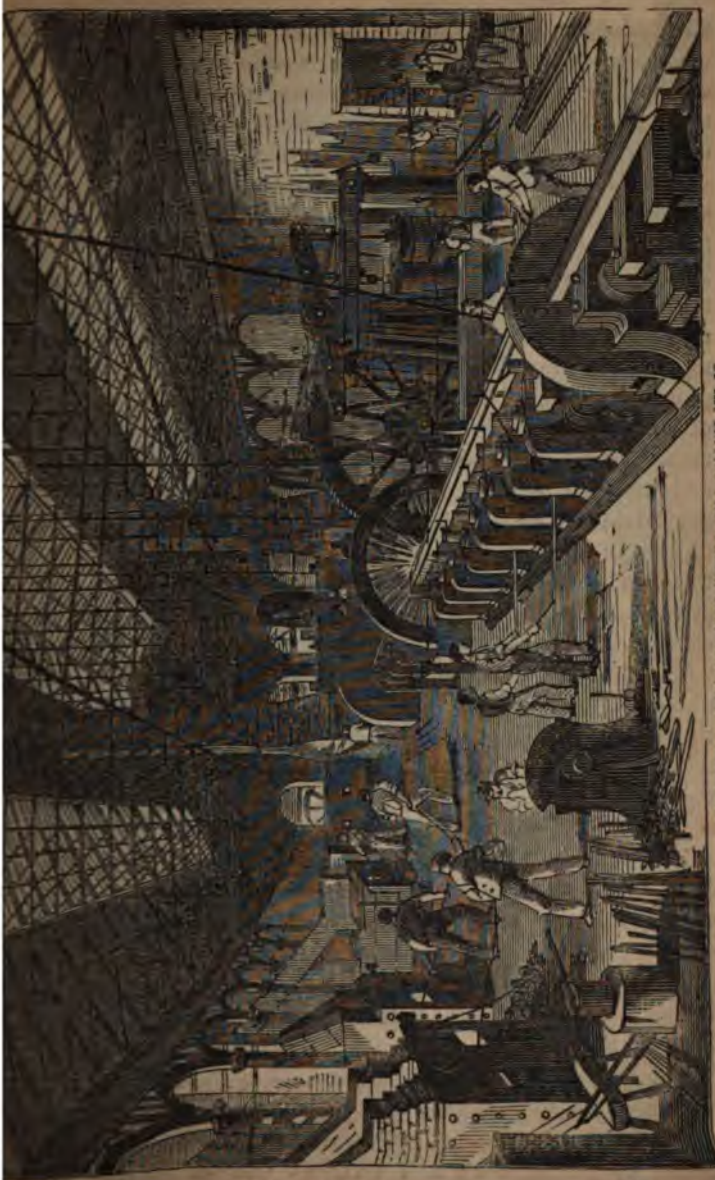
THE CYCLOPS STEEL AND IRON WORKS—THE FORGING SHOP.

hydraulic pressure—the more essential when we consider that any inattention in these requisites might cause a frightful sacrifice of life to travellers on the line. The railway-spring department at the "Cyclops" produces the largest number of railway and other springs in the world—125 tons *a week*. The care taken in this portion of the works to produce the *best* article is wonderful, and the perfection arrived at is indeed surprising. Those of our readers who cannot avail themselves of the courtesy of the proprietors in inspecting the works, will do well to visit the Sheffield court of the Crystal Palace at Sydenham, and there examine, at their leisure, a few of the productions of this house. The men engaged on these premises are models of herculean hardihood, so much does muscular exercise, even of the rudest and most severe character, develop the bodily frame. The hearing of these men is, however, frequently affected by their employment; nor can we wonder at this, for the clang of the machinery and tools is something prodigious.

Entering another department, we see rooms lined with rows of jars, reminding one of the famous Ali Baba and his Forty Thieves. The purposes to which these are applied will be obvious, if the visitor will glance at the furnaces at his feet, in which will be seen some of these fire-clay crucibles containing broken pieces of steel undergoing the process of casting and refining. The crucibles are lifted out with tongs, furnished at the fire end with a pair of concave jaws, for embracing the curvature of the crucible and lifting it out whenever the fusion is complete. The lid is then removed, the slag is cleared away, and the liquid metal is poured into cast-iron octagonal and rectangular moulds, during which operation it throws out bright scintillations.

The men employed in the cast-steel factory appear to be endowed with salamandrine properties, from their apparent indifference to the intense heat to which they are exposed.

The "Cyclops" Steel and Iron Works present a scene of the utmost animation. No true Sheffielder can look upon this noble establishment without a feeling of just pride, and a trusting confidence in the destiny of this rising town. The most jealous artisan could scarcely view the "Cyclops" Steel and Iron Works with dissatisfaction; for, while every contrivance that human ingenuity has yet devised for saving manual labour has been introduced here, so far as the nature of the manufactures *admit, yet so* immensely has its produce in the consumption of *files, springs, steel,* forgings, tools, &c., been increased, that instead of



THE CYCLOPS STEEL AND IRON WORKS—THE ROLLING MILLS.

human labour being diminished, it is largely extended. The crude notions entertained half a century ago, as to the influence of machinery on the labour market, have often been refuted, but in few instances more palpably than in the large and bold illustration afforded by these magnificent Works.

A variety of interesting workshops should be examined, such as the smiths' shop, in which are *nine* great chimneys, each serving for two fires; the cutting-up shop, in which the eccentric roller is seen in its beautiful operations. Here iron and even steel is cut into pieces with the same ease as the rind of a cheese might be pared. From the mechanics' shop we enter the grindery and file shops, all exhibiting the magnitude and perfection of these manufactures. A visit to this Cyclopean establishment is replete with interest. Here may be traced one of the acknowledged sources of the power of England, in an establishment founded and presided over by surprising energy and enterprise, and exhibiting in all its details the combined elements of manufacturing greatness; and no intelligent visitor to Sheffield should fail (with permission of Messrs. Cammell) to inspect the crowning glory of the town, and one of the sources of its commercial greatness. We have not attempted to give more than a mere sketch of the process of steel-converting, referring the reader to the "Penny Cyclopædia" and Poole's "Statistics of Commerce." In the former work will be found an elaborate account of this important manufacture (see vol. xxiii.), and in the latter, a comprehensive statistical statement. To all thinking minds "these statistics will strengthen the conviction that all things in the animal, vegetable, and mineral kingdoms have their uses specially adapted to the comforts and necessities of mankind."

The "Cyclops" Works are by far the most important in the kingdom as regards the manufacture of steel—perhaps the more correct expression would be, the converting of iron into steel;—and we have, in another place, shown the *modus operandi* at the works under notice. It now remains that we should explain more fully some of the interesting statistics connected with this important manufacture. It is to be observed that Swedish and Russian bar iron have been exclusively used for the best steel. Messrs. C. & Co. have wisely decided upon making themselves to some extent independent of the contingencies of the *foreign market*, and they have recently turned their attention to the *making of iron for* their own use; they now not only manufacture the

THE CYCLOPS STEEL AND IRON WORKS—THE SPRING SHOP.

best steel, but make the *best iron* peculiarly suitable for their purposes. The iron made here is from Indian, Swedish, Nova Scotian, and the best selected cold blast "pigs" of this country; thus they produce a finer class of iron than was before known in the steel trade, and Messrs. C. & Co. are at the present time engaged not only in making iron for their own purposes, but also for the Armstrong guns made at Woolwich.

Of all the uses to which steel is applied, that of railway springs is by far the most important, and it is for this increasing branch of manufacture that Messrs. C. and Co. have gained a world-wide reputation; all the chief railway companies in this and other countries are their clients; the mighty operations at the "Cyclops," to meet the demand for springs know no cessation—day and night the fires burn, the furnaces are full, and the steam-hammers, tilts, driving-wheels, &c., echo on the air; but the reputation of the proprietors of these gigantic works rests not solely upon this department of their productions, they being the largest manufacturers of steel files in this or any other country on the face of the globe, and contractors to many governments. No men living so thoroughly understand the requirements of a good file. To the uninitiated there is little presented to the eye to distinguish the superior from the inferior article, no evidence given of temper and hardness; but the knowledge of the existing difference is patent to some, and that, as regards files, "the best is the cheapest" may be considered an axiom.

We have reason to know that the pages in which these remarks appear will be read in remote portions of the world; and while we render justice to one of the most enterprising firms in England, we at the same time confer a favour on the consumers of the articles made at the establishment under notice.

The "Cyclops" Steel and Iron Works, Sheffield, stand prominently forward as the leading establishment for the manufacture of all kinds of steel, railway springs, files, &c. This proud position was attained by the intelligence of the present proprietors, and must not be considered the result of chance, but the natural result springing from a combination of those two great qualifications, *energy* and *sagacity*. When combined—and but rarely are they combined—they are mighty levers, removing all obstacles, the latter becoming *stimulants* for renewed exertion.

We are led to these remarks by a recent visit to the enormous *works under notice*, to which a new department was early in the *present year (1861)* added. This section may be called the CYCLOPS

IRON WORKS, the principal operations being the manufacture of the best iron. Here are refineries, steam-hammers of the largest size, shingling and forging the heaviest masses of iron, gigantic rolling mills capable of producing anything which may now be used in best iron, or indeed anything which is likely to be required in this iron age, and every possible requisite for the requirements of the important and stupendous operations carried on by this firm. The ground covered by this department is over *five acres*, having a grand frontage on the Midland Railway of over 600 feet, and being immediately opposite the Cyclops Steel Works. In fact, we may consider the whole of the premises to be thus divided:—Cyclops Steel Works, seven acres; Cyclops Swedish and Indian Steel Iron Works, three acres; Cyclops Steel *and* Iron Works, five acres; the whole forming the most complete and important plant of its kind in the world. The whole of the gigantic works may be compared to a beautiful piece of mechanism, controlled by the master minds of the proprietors and their coadjutors.

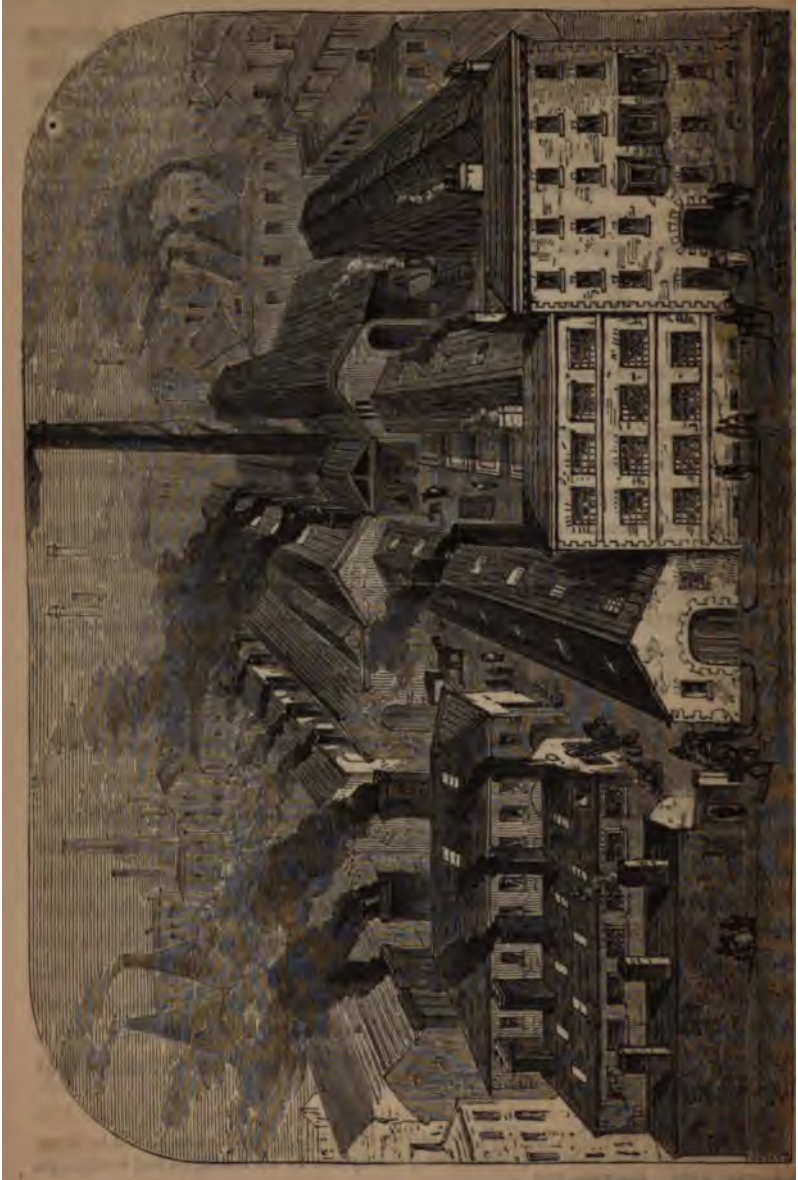
The railway sends tram-lines into all portions of the works; and the line appeared to us to be for miles covered with wagons consigned to and belonging to the firm.

In our next edition we hope to introduce several carefully-prepared additional engravings, and letter-press, of this marvellous establishment, and especially of the new buildings recently erected.*

THE KELHAM IRON WORKS OF MESSRS. JOHN CROWLEY AND CO., GENERAL IRON FOUNDERS, ETC.

The eminent iron-founders, trading under the above firm, are MESSRS. JOHN AND HENRY CROWLEY, who commenced business about thirty-five years ago, and by the introduction of various improvements in malleable cast-iron, suitable for engineers, railway companies, and agricultural implements, they have not only overcome many objections with respect to cast-iron, but they have established themselves a celebrity (in the various departments with which they are connected) which entitles them to RANK WITH THE FIRST OF THEIR CLASS IN THIS COUNTRY. The works of the firm are at Sheffield, with a branch establishment at Manchester.

* In the description of Norton Hall, the private residence of Mr. Cammell, will be found an abbreviated account of the magnificent *fete* given by him to his managers and workpeople in August, 1860. *See page 252.*



We are firm believers in the omnipotency of *iron*. If, at some future period, the historian of our country should be called upon to name the principal source of its prosperity, he will undoubtedly attribute it to the marvellous power of iron; for in all our greatest works, this metal has entered the most largely into their stability and permanence. THE KELHAM IRON WORKS are among the most interesting sights that our manufactures, the glory of Britain, can boast.

One of the leading articles manufactured by Messrs. Crowley and Co. has been, for several years past, the PATENT SECTION TAPET, invented by Mr. B. Woodcroft. This highly valuable appliance is used for weaving all manner of fancy fabrics, whether in wool, cotton, or silk. From the immense quantity made, it must be evident that the demand for this instrument must be very great. They are also manufacturers of Iron Boot Heel and Toe Plates, to the extent of many millions yearly, which are used by the British and Turkish Governments, and have besides a large trade in every description of ornamental castings. The Kelham Iron Works were established in 1825, and have (like all our leading manufactories) been extended from time to time, until the buildings at present cover an area of two acres. Upwards of 500 operatives are employed on the premises.

THE CAST STEEL BELL MANUFACTORY OF MESSRS. NAYLOR, VICKERS, AND CO.

These extremely interesting works are situated at MILLSANDS, and are among the principal manufactures in Sheffield. On these spacious premises are carried on, in addition to several branches of the trade in steel, the casting of Bells.

CAST STEEL BELLS are the invention of a German Steel Manufacturer, and were first in use in Germany. One of the first was exhibited at the Paris Exhibition of 1855, and the inventor received for it the Cross of the Legion of Honour, the large gold medal being awarded to the manufacturers.

They were produced in England by Naylor, Vickers, and Co. as early as 1855, since when, having made great progress and various improvements in the manufacture of Cast Steel Bells, Naylor, Vickers, and Co. have sold upwards of 3,000 Cast Steel Bells of from 12 to 84 inches diameter, most of them being of the larger dimension. In this number

e comprised many peals, the most important of which are in the llowing churches:—

St. Marie's, Sheffield.—A Peal of eight: tenor 54 inches, note E t, weight 2,000 lbs. Total weight of Peal, 8,500 lbs.

St. Clement's, Hastings.—A Peal of eight: tenor 52 inches, note , weight 1,900 lbs. Total weight of Peal, 7,880 lbs.

St. Peter's, Bolton-le-Moors, Lancashire.—A Peal of six: tenor 45 ches, note F sharp, weight 1,170 lbs. Total weight of Peal, 800 lbs.

Christ Church, Bridlington Quay.—A Peal of six: tenor 42 inches, ote G, weight 950 lbs. Total weight of Peal, 3,900 lbs.

Stainland, near Halifax.—A Peal of six: tenor 44 inches, note G, eight 1,150 lbs. Total weight of Peal, 4,000 lbs.

Eastwood, Notts.—A Peal of six: tenor 51 inches, note E, weight 000 lbs. Total weight of Peal, 6,300 lbs.

Bamford, Derbyshire.—A Peal of six: tenor 39 inches, note G sharp, eight 850 lbs. Total weight of Peal, 3,100 lbs.

Chalford, Gloucestershire.—A Peal of six Bells: tenor note G, weight 0 lbs. Total weight of Peal, 3,700 lbs.

Bedminster Church,		*Near Bristol.*	St. James' Church,		*Rochdale.*
St. Mark's	„	*Sheffield.*	Greenock	„	*Scotland.*
St. Paul's	„	*Burnley.*	New Free	„	*Ardrossan, Scotland.*
Carlecoates	„	*Mottram.*	Parish	„	*Innishannon, Ireland.*
St. Paul's	„	*Chester.*	Seagor	„	*Portadown, Ireland.*

Large single Bells at various lighthouse stations of the Honourable orporation of the Trinity House, &c. &c.

There has been, and there is still (in the minds of those who have ot seen and heard them), a strong prejudice against Cast Steel Bells, id to this day the ignorant still doubt their melody and power of ne, and believe them to be more liable to break, especially under mospheric changes, than Bronze Bells. If all these objections had oved more than imaginary, Cast Steel Bells would not, as they now , enjoy an extensive sale; and their commercial success, which has en established in the face of existing prejudices, and the opposition ised by the two or three Bronze Bell makers who have hitherto onopolized the trade, would have been an utter impossibility. It is nerally allowed by those who have heard them, that the tone of Cast eel Bells is sweet, musical, and powerful, and that it penetrates to

THE CAST STEEL BELL MANUFACTORY OF MESSRS. NAYLOR, VICKERS, AND CO.

a greater distance than that of Bronze. Messrs. Naylor, Vickers, and Co. hold a large number of testimonials to this effect, open to the inspection of any one ; and we are informed that they earnestly request those interested in bells to hear the Cast Steel Bells, and judge of their merits for themselves.

For this purpose Messrs. Naylor, Vickers, and Co. have always in their belfry at River Don Works, Sheffield, one or more peals ready for ringing; and those to whom it may not be convenient to go to Sheffield, can learn, on application to Messrs. Naylor, Vickers, and Co., the nearest place where Cast Steel Bells can be found.

As to strength, it is hardly necessary to prove to any one acquainted with the comparative strength of metals the utter absurdity of the belief prevalent in some quarters, of *Cast Steel Bells being inferior in this respect to Bronze.* Naylor, Vickers, and Co.'s Bells are made of Steel melted in crucibles, or *malleable Cast Steel*, which has far greater strength—tensile, sectional, or otherwise—than any other known metal or combination of metals; any portion of a Cast Steel Bell can be heated, forged, and made into a tool which demonstrates the malleability of the material of Cast Steel Bells.

Pure Bronze, which is an alloy of copper and tin, Cu^6Sn., or the mixture of copper, tin, *zinc*, and other *meaner* metals, nowadays often used for so-called Bronze Bells, is exceedingly brittle, and cannot resist as heavy blows and as hard usage, wear so well, and resist sudden atmospheric changes at a severe temperature so well as Cast Steel. It is owing to this fact, and to the greater elasticity of Cast Steel, that Cast Steel Bells can be, and are, made thinner by 40 per cent. than Bronze ones of the same size, while they have the same key as, and a more penetrating and more powerful tone than, Bronze Bells of the same size.

	PER CENT.
This fact alone constitutes therefore an advantage for a given size, key, and power of tone in favour of Cast Steel, as compared with Bronze of	40
Not to mention minor advantages, such as decreased labour in ringing, &c.	
Weight of Cast Steel Bells	60 of Bronze
While the price of Cast Steel Bells (10d. per lb.; small sizes, 1d. to 2d. per lb. extra) is again less by 40 per cent. than that of Bronze, which averages about 1s. 5d. per lb. 40 per cent. of above 60 per cent. .	24
Cost of Cast Steel Bells	36 of Bronze

Or about one-third, which is best illustrated by the following

COMPARATIVE TABLE OF COSTS.

CAST STEEL BELLS.				BRONZE BELLS.				Advantage of Steel over Bronze Bells.	
Diameter.	Weight.	Price per pound.	Cost of each Bell.	Diameter.	Weight.	Average price per lb.	Cost of each Bell.	In Weight.	In Price.
Inch.	lbs.	s. d.	£ s. d.	Inch.	lbs.	s. d.	£ s. d.	lbs.	£ s. d.
18	100	0 11	4 11 8	18	162	1 5	11 9 6	62	6 17 10
24	200	0 11	9 3 4	24	369	,,	26 2 9	169	16 19 5
30	430	0 11	19 14 2	30	706	,,	50 0 2	306	30 6 0
36	740	0 10	30 16 8	36	1152	,,	81 12 0	452	50 15 4
48	1600	0 10	66 13 4	48	2500	,,	177 1 8	900	110 8 4
72	4640	0 10	198 6 8	72	6600	,,	467 10 0	1840	269 3 4

We show, therefore, advantages in favour of Cast Steel Bells, *cæteris paribus*, of power of penetration and strength, and an enormous saving in price; and we believe it to be the interest of all who are interested in Bells, to examine for themselves the manufacture of Messrs. Naylor, Vickers, and Co.

The business of Messrs. Naylor, Vickers, and Co. dates from the close of the last century, and has acquired such extension, that branch establishments have been established in London (80, Lombard-street), Liverpool, New York, Boston and Philadelphia.

We should add also, that Messrs. Naylor, Vickers, and Co. are MANUFACTURERS OF EVERY DESCRIPTION OF STEEL MADE IN SHEFFIELD, AND OF LARGE CASTINGS AND FORGINGS (which are a *spécialité*) in Steel; such as Cast Steel Crank and Straight Axles, Piston Rods, &c., &c.; Solid Railway Tyres without weld, and in CASTINGS IN STEEL TO PATTERN.

THE SILVER-PLATED AND BRITANNIA METAL WORKS OF MESSRS. JAMES DIXON AND SONS, POWDER FLASK AND SHOOTING TACKLE MANUFACTURERS.

We now introduce our readers to one of the largest plated and Britannia metal works in the world, a small colony of busy workmen, in itself giving employment to upwards of six hundred artisans, many of whom receive high wages, and live in much comfort. The buildings (which cover an expanse of four acres, called Cornish-place) have been

enlarged from time to time, and will afford an idea of the immense business pursued here. The large chimney, which serves to point out from a considerable distance the *locale* of the manufactory, is upwards of 120 feet high.

The business was established in the year 1806, by Messrs. Dixon and Smith as Britannia Metal Manufacturers, in Silver-street, Sheffield, and since that period it has increased in reputation as a first-class supplier of articles, unexampled for their workmanship and beauty.

The general disuse of the old pewter ware, once so common in this country, was followed by the introduction of another metal, in the manufacture of which an ingenuity is displayed to which the ancient pewterers were altogether strangers. The modern material (the base of which is tin) has been called Prince's metal, more commonly Britannia metal, and by the workmen white metal; indeed, its resemblance to silver was so apparent at the Great Exhibition of 1851, that the authorities of that building had great difficulty in telling the difference between the goods then displayed and silver ware; so they recommended Messrs. Dixon and Sons to have inscribed on their cases, in large characters, BRITANNIA METAL. The beauty of this metal, when wrought into a variety of articles, is not more striking than its cheapness in the manufactured state is surprising. This latter circumstance results, independently of the price of the material itself, from the extensive application of machinery, and the extreme lightness of body with which wares in Britannia metal can be produced.

The principal, if not, indeed, the only seat of the manufacture of this metal is at Sheffield, and Messrs. Dixon and Sons represent the trade in that town. (The composition and application of Britannia metal on a large scale was begun about the year 1770, by two individuals of the name of Jessop and Hancock.) The composition of Britannia metal consists of best block tin, martial regulus of antimony, copper, and brass. The amalgamation of these metals is effected by melting the tin, and raising it just to a red heat, in a stout cast-iron pot or trough, and then pouring into it, first the regulus, and afterwards the copper and brass, from the crucibles in which they have been respectively melted; the caster, meanwhile, stirring the mass about during this operation, in order that the mixture may be complete. *The fusion of the* whole being completed, the liquid metal is trans-

THE BRITANNIA METAL WORKS OF MESSRS. JAMES DIXON AND SONS.

ferred to the casting-boxes, which are made of cast-iron, and give to the metal poured into them the form of a slab. It is likewise put into other moulds forming small ingots, for the convenience of being used in the casting of such articles as are not made out of the sheet-metal. The rolling or flattening of the metal into sheets is performed in the manner practised in the lamination of metals generally,—that is, by passing it repeatedly between polished steel cylinders. It should be observed that Britannia metal is not only one of the most tractable of substances to work from the sheet, as well as one that runs most readily in the moulds, but it is also one that is cut most freely and pleasantly by the tools of the turner.

Plated Trade.—In the year 1829 the Silver-plated trade was added by Messrs. Dixon and Sons, and has been most successfully prosecuted until it has become the largest branch of their business.

Sheffield was the original seat of this manufacture, and has continued to maintain its celebrity for excellent quality, as "Sheffield Plate" is a term universally admitted to designate a first-class plated article.

The art of fusing silver with copper was originally discovered by a person of the name of Bolsover, of Whitely Wood, near Sheffield, in the year 1745, and used for knife-handles and buttons. It was soon adapted to other articles, and became an important trade in the town.

The introduction of electro-plating has interfered, to some extent, with the old mode of plating on copper, but Messrs. Dixon and Sons now plate by the *fire process* on Nickel Silver; and this metal, when mounted with ornamental silver mountings, is most suitable for large articles with flat surfaces, such as dishes, waiters, &c., and are most durable and easily cleaned.

Messrs. D. and Sons have, however, availed themselves of the modern art of electro-plating and gilding, which process allows of great scope for elegant and ornamental designs, and a beautiful variety of those goods (fully entitled to these terms) may be seen in their new large show-room, which is a great credit to the town. Messrs. D. and Sons have devoted great attention to the fork and spoon trade; fish, eating, and dessert knives and forks; and which, being in the first place cut out of sheets of Nickel Silver, hammered and stamped under Nasmyth's powerful hammer, a strong, well-made article is produced, and equal in appearance to silver.

Messrs. Dixon and Sons also give particular attention to the silver trade, and especially to Presentation Plate, having first-class designers, modellers, chasers, &c. Messrs. D. and Sons have succeeded in plating their Britannia by the electro process, and produce beautiful and serviceable articles in Coffee and Tea Services, as well as other goods, at one-third the price of those on Nickel Silver. This is becoming with them an important branch as the durability of the goods becomes known. Many parties have now had them in use for ten years, and have found them to wear well, and clean like silver.

The POWDER FLASK trade was commenced by Messrs. James Dixon and Sons in 1832, and is now one of the leading branches of their manufactory; indeed, the largest stock in the world is made here. An immense variety of patterns may always be seen at these works. The designs used by the firm are classical, modern, and antique, and are much appreciated for their exquisite finish and beauty.

The SHOW ROOMS at Cornish-place are spacious apartments, filled with an immense assortment of articles manufactured on the premises. Silver and Plated goods are in one large show-room, and the Britannia metal and shooting apparatus in a second. Besides some beautiful specimens of Britannia metal work, the visitor will see SHOOTING APPARATUS OF ALL KINDS, Pouches, Belts, Flasks, Liquor Flasks, for making which, as the racy author of "Field Sports in the United States," Frank Forester, observes, "Messrs. Dixon and Sons, of Sheffield, are a hundred to one against the world." The IMPROVED SHOT POUCH is a boon to all sportsmen. The registered improvement consists in the cutter being attached to the lever by springs, so that it can be removed to change the charge of shot, without the aid of the turnscrew. Amidst a multitude of useful objects, we find Shot Belts, Powder and Shot Measures, Dog Calls, Game Bags, Glass Dram Bottles, Breech-loading Cartridge Implements, Greyhound Slips, Britannia Metal Dram Flasks, Saddle Flasks, and Yorkshire Kegs. We must conclude our notice of this interesting manufactory, remarking, however, that in no works of similar magnitude will the visitor see more admirable order, or better arrangements for business purposes. Messrs. James Dixon and Sons make their own gas, and consume it largely by day, for soldering purposes, as well as by night. All the packing-cases and casks required in the business are also made on the

premises. The proprietors of these extensive works are deservedly held in the highest estimation, not only in Sheffield, but wherever the name is known and appreciated. W. F. Dixon, Esq., the senior member of the firm, is a Justice of the Peace for the county. He was deputed by his fellow-townsmen to receive from the hands of the Emperor of the French, at the close of the Exhibition of 1855, the Gold Medal awarded to the town. This has been since handsomely mounted in a case, and the names of all the exhibitors engraved on a silver plate, and it is now in the care of the Cutlers' Company.

In 1842, an enormous silver candelabra was presented, in a most gratifying manner, to the late James Dixon, Esq., as a mark of respectful esteem on his retirement from the firm.

William Fawcett, Esq., late Mayor of Sheffield, is an active member of the firm. During his mayoralty, in 1856, the workmen employed on the premises presented this gentleman with a splendid silver claret-jug and waiter, to mark their sense of his endeavours to uphold the trade and sustain the dignity of the town.

The firm received a first-class medal at Paris, in 1855. In the Panthéon Biographique of 1859, a long article is devoted to a description of this manufactory. At the Great Exhibition of 1851 a medal was granted both for the Britannia-metal goods and the Powder-flasks of Messrs. James Dixon and Sons.

The Ætna Works, the Property of Messrs. Spear and Jackson, Manufacturers of Hardware and Steel.

The premises known under the above designation are situated in Saville-street, and are among the first-class manufactories in this town of industrial curiosities. The business carried on occupies a small army of workmen, numbering six hundred strong, aided by steam of 100-horse power. The buildings cover more than three acres of land, and are bounded on one side by the Midland Railway, from which trains permeate the various departments.

Messrs. Spear and Jackson have long been known as the largest makers of *saws* in the kingdom, and we may safely add, in the world. Saw-making may appear to be a very simple process in the eyes of most people, but the processes employed are many, and require care. In this branch of the business, the ingot, tilt-hammer, and crushing-rollers,

THE ATLAS WORKS, THE PROPERTY OF MESSRS. SPEAR AND JACKSON.

with the shears, are in regular requisition. In the Saw Department the visitor will observe immense numbers of large sheets of steel. These are cut into the required lengths by the aid of the shears. The first process, after being cut, is a very natural one in an infant saw, being that of teething. The teeth are cut with considerable rapidity. The tooth-cutter is a sharp instrument at the lower end of a working screw, which is acted upon by a hand lever; every pull of this lever confers a full-grown tooth, and the teething in an ordinary saw only requires a few moments in the hand of the operator. After this the teeth are filed, and then the tool is hardened by being subjected to a powerful heat in an oven, after which it is immersed in an oil-bath.

The next process is that of being *smithed*. After the saw has been hardened, it is all over full of inequalities. The smithing consists in hammering the tool until it assumes a perfectly level surface; after this it is ground, hammered, and glazed. The next ordeal is that of being blocked, which means that it is once more hammered; this time, however, the hammering is done on a block of wood, instead of being done on an anvil, as formerly. The next process it passes through is by far the most particular in point of nicety of workmanship; this is what is termed the setting of the teeth. The manner in which this is done is by the operator striking every alternate tooth on each side of the tool until he has finished the whole. The next process is that of *stiffening*. This is done by once more heating the saw until it assumes a straw colour, after which it is rubbed through fine emery, sharped, and handled.

A multitude of objects are made at the Ætna Works: Surgical and other Instruments, Sugar-Cane Bills (the latter being largely exported to the United States and South America), Ledger Blades for Cloth Shearing, Files, Edge Tools, Machine Knives, Agricultural Implements, Spiral Cutters, Curriers' Knives, Splitting Knives, Paper Knives, Chaff Knives, Cane and Corn Knives, &c.

Upon entering the premises and passing into the centre of the quadrangle, we have before us the Forge, and on our left the large PACKING ROOMS. Here, during a recent visit, we observed circular saws in preparation for despatch to Woolwich five feet in diameter, and we were informed that Messrs. Spear and Jackson have had circular saws constructed *six feet* in diameter! Here, also, we observed saws ten feet

long, intended for the Californian market. The CUTTING-OUT SHOP in the Saville-street Works contains Giant Shears, Toothing, and other valuable machines. In the Circular Saw Grinding Department we were much interested in the various processes carried on. In the yards are enormous piles of grinding stones, and in other parts of the premises are large stores of iron from Sweden, and worth £20 to £30 per ton.

In the STEEL CONVERTING ROOM we noticed several Furnaces at work, each laden with about twenty tons of iron, which was being converted into steel; and in the Melting Furnace there was provision for fifty crucibles, each of which would turn out near one hundredweight of cast steel per day.

The EDGE TOOL WAREHOUSE is a marvellous storehouse of goods; amongst other articles we observed a large stock of Bill-hooks ready for exportation, and were informed that during the Crimean war 25,000 of these useful articles were made for the Government. In the FORK FORGING SHOP we noticed some fine machines by Whitworth. In the PICK FORGE, 1,000 picks are manufactured weekly for Government.

On the whole, the Ætna Works are of unrivalled interest, and are known in all the industrial circles of Europe. Messrs. Spear and Jackson received the Council Medal at the Great Exhibition of 1851, and the *Médaille d'Honneur* at Paris in 1855, together with the Cross of the Legion of Honour.

MESSRS. JOSEPH RODGERS AND SONS, CUTLERS TO HER MAJESTY.

The premises belonging to this eminent firm are situated in Norfolk-street. The buildings (which have been recently erected under the superintendence of Mr. Weightman, architect, of Sheffield) comprise a splendid suite in the Italian style, with circular-headed windows, &c. The principal façade presents a frontage of about 120 feet to Norfolk-street, and about 80 feet to Milk-street, four stories high, with rusticated ashlar basement, faced above with patent pressed bricks, having cleansed stone quoins, window-dressings, &c. In the pediment are the Royal arms and supporters well carved in stone, and the gable is surmounted by three elegant fluted vases. The principal entrance is from Norfolk-street, by a bold lofty doorway, enriched by carvings, and leading into a spacious vestibule, with floor of *encaustic tiles*, of beautiful design.

A handsome stone staircase, with bronze balustrades, leads to the Show Rooms.

The gentlemen now representing this eminent firm are Messrs George Joseph Rodgers, Robert Newbold, Joseph Rodgers, and Joseph Nelstrop. The business has been established in the cutlery and plate trade since 1720, and has been honoured with the royal patronage of three British Sovereigns, Her Majesty Queen Victoria having nominated, in a special manner, this firm to be Cutlers to the Court.

In these extensive works about 600 workmen are employed (the division of labour in this business being very great), and steam of fifty horse power facilitates operations. It was about a century ago that the cutlery of Sheffield began to acquire such decided excellence as to raise it to a high rank. But it was not until the introduction of the mode of making cast steel that this reputation reached its height; and at the present day it is not merely in the making of the steel, but also in the mechanical details of the manufacture that the quality of the Sheffield steel goods is shown and appreciated.

There is in most of the operations on steel goods a series of processes pretty constant in their general character. The forging, the hardening, the tempering, the grinding, the sharpening, the polishing—all form steps in most of the series, and bear a certain resemblance in their general character. The processes are marvellously simple, and yet require supervision: thus in the instance of a knife, which in the course of manufacture is passed through ten or twelve hands, and seems to an ordinary beholder a very easy matter, yet at every one of these ten or twelve stages it is subjected to the scrutinising gaze of an overlooker.

Pen and Pocket knife-blades are made entirely of fine cast steel, but in making Table-knives, a length of bar is cut off, sufficient for one blade and forged into shape. To make the "tang," or part which goes into the handle, the rudely-formed blade is welded to a rod of iron about half an inch square, and a sufficient length of the iron is cut off to form the tang, and also the "shoulder," or projecting part between the handle and the blade. These made, the whole is heated a second time and the proper form and dimensions given to it. The blade is then heated red-hot, and plunged perpendicularly into cold water, by which a sudden hardening is effected; and a gradual heating afterwards to a certain point "tempers" the blade. It is next subjected to the

THE CUTLERY WORKS OF MESSRS. JOSEPH ROLGERS AND SONS.

grinding wheel, after which it is ready for glazing or polishing. W
regard to the handles, Messrs. Rodgers and Sons make use of the
ivory, which is imported in large quantities from Africa. The i
"dust" being full of gelatine, is now in great demand for making j
which is highly recommended by the Faculty to invalids.

It would be impossible in our brief limits to enumerate even a s
portion of the valuable articles manufactured on these premises.
goods are all of sterling quality, and are held in world-wide estimat
consequently we are not surprised to hear that "counterfeits" have
made by shameless fabricators, and are palmed off upon the pu
To insure the discovery of these frauds, *Messrs. Joseph Rodgers
Sons have caused all their manufactured articles to be marked with
name and address of the firm*, and, in addition, *they have added a* TR
MARK, consisting of a cross and a star (+*), granted by the
Corporation of Cutlers, an infringement of which can be summ
punished by the magistrates, instead of the old and interminable pr
of a Chancery suit.

In the extensive SHOW-ROOMS attached to the premises the vi
will see an attractive display of the curious and beautiful produc
made by Messrs. Rodgers and Sons, consisting of CUTLERY OF EV
DESCRIPTION, PLATED AND SILVER WARES, TOILET CASES, LA
WORK CASES, &c. &c. &c., and a most interesting collection of
osities in these peculiar branches of the arts, made from time to
by some of the best skilled workmen employed by the proprietors.

This Exhibition is a great attraction to strangers in Sheffield,
receive the most polite attention from the *employés*.

Messrs. Rodgers and Sons have, likewise, a depôt of goods suit
for the wholesale trade at No. 4, Cullum-street, Fenchurch-st
London.

THE ATLAS CHANDELIER AND BRASS WORKS OF MESSRS. BENJAMIN VICKERS AND CO.

These enormous premises (the property of John Brown, Esq
Chesterfield) have a noble frontage in SAVILLE-STREET EAST, opp
the Cyclops Works, and have for a long period ranked among
foremost manufactories in Sheffield. During a recent visit to the A
Works we were much interested by observing the various proce

THE ATLAS CHANDELIER AND BRASS WORKS OF MESSRS. BENJAMIN VICKERS AND CO.

of manufacture carried on there, an account of which and the premises having been published in the *Sheffield Daily Telegraph*, we append it for the information of our readers, confirming the truth of the description by our own testimony:—

"The long range of buildings connected with the works is familiar to all who know the locality, but any one who is favoured with an interior inspection of the place will be struck with the activity which prevails, and the various branches of manufacture in brass which are carried on. Upwards of 200 hands are employed, and those who feel an interest in the manufacturing property of the town will not hesitate in coming to the conclusion that this establishment is under the direction of gentlemen possessing perseverence, energy, and all the other qualifications necessary to carry on an important business. Since the alteration in the firm, the business has increased to a very large extent; so much so, that it is now only with the greatest exertions that the numerous orders which come to hand can be executed. This is the more satisfactory, seeing that the manufactures pursued are comparatively new to Sheffield, and that the successful establishment of such a concern will tend to lessen our dependence upon those branches of manufacture which have hitherto been considered the staple trades of Sheffield. The articles produced are chandeliers and gas fittings of every description, steam and water cocks, plumbers' brass work, carriage, railway, and table lamps, &c. The long ranges of workshops admit of admirable arrangements for the subdivision of labour, one of the grand secrets in the success of any manufactory. The nature of the employment necessitates the engagement of skilled artisans only, and in passing between the long rows of men engaged at their lathes, benches, and forges, a great amount of expertness is observed. One enthusiastic and obliging operative, for instance, took pains to explain the operation of an ingenious blow-pipe he used in soldering together the various parts of a chandelier. The apparatus consisted of an outer tube enclosing two smaller tubes, one supplying a jet of gas, and the other a current of air, both of which could be regulated to any degree of strength, and worked by a foot-treddle. Employment is here also given to a number of females in lacquering the brass work, wrapping up the finished goods, &c. &c. The show-rooms are stocked with goods of rich artistic design *and exquisite* workmanship, and embracing improvements peculiar to this

establishment alone. One description of chandelier is worthy of particular mention in consequence of the peculiarity of its construction, and for which a patent has recently been obtained. It is called the PATENT ATLAS SLIDING CHANDELIER, and the principle for which the patent has been obtained is one which gives perfect security against danger by explosion from the escape of gas, or accident through the breaking of the chains supporting the balance balls of ordinary chandeliers. By the new arrangement the counter-balance is in one ring, and is not affected by the breaking of one chain; or even should they all break, the weight will fall upon the body of the chandelier, and at the same time close a valve which prevents an escape of gas. Another portion of this invention *indicates when there is a deficiency of water in the slides*. It consists of a small whistle, so connected with the water cup, that when a fresh supply is required and the gas makes even the slightest escape, a shrill sound is at once given out and maintained until either water is supplied or the gas turned off. By this means the most fruitful source of gas explosions in private houses is effectually guarded against, and on this account the invention recommends itself to general adoption. The greatest object of interest at the works at the present time is a *monster chandelier*, one of a pair which are being manufactured for Mr. Youdan. It is of colossal proportions, and as a work of art exceeds anything of the kind hitherto manufactured. It is 12 feet high and 7 feet wide, and is composite in design. The main stem springs from an urn-shaped "dish," 2ft. 3in. in diameter, and branching from it are eighteen arms for as many lights. The main features in the details consist of a graceful arrangement of fern-leaves, amongst which are several finely-executed stags in Florentine bronze, as well as a judicious introduction of the fir apple, also in bronze, producing a fine contrast with the brass work of the greater part of the chandelier. This fine specimen of workmanship, we find from advertisement, is open for inspection to-day, and we venture to state that all who may avail themselves of the opportunity of viewing it will find themselves amply repaid."

To this description we may add that the productions of the Atlas Works are of infinite variety, including PATENT BRASS TUBES, MOULDINGS, BRASS BEADING, STAIR RODS, CHANDELIERS, PENDANTS, HALL LAMPS, TRIPODS, CHIMNEY STANDS, RAILINGS, BALUSTRADES,

Cornices, Curtain Bands, &c. &c. The Lacquering Rooms, Chasing and Burnishing Rooms, and Chandelier Department, are each three hundred feet in length. In the Lamp Department, a room one hundred feet long, the visitor will see some specimens of fine art goods, of exquisite pattern and workmanship. In one portion of the building one hundred and fifty lathes may be seen, moved by steam power. Messrs. Benjamin Vickers and Co. are also manufacturers of Railway Lamps and Semaphore Signals.

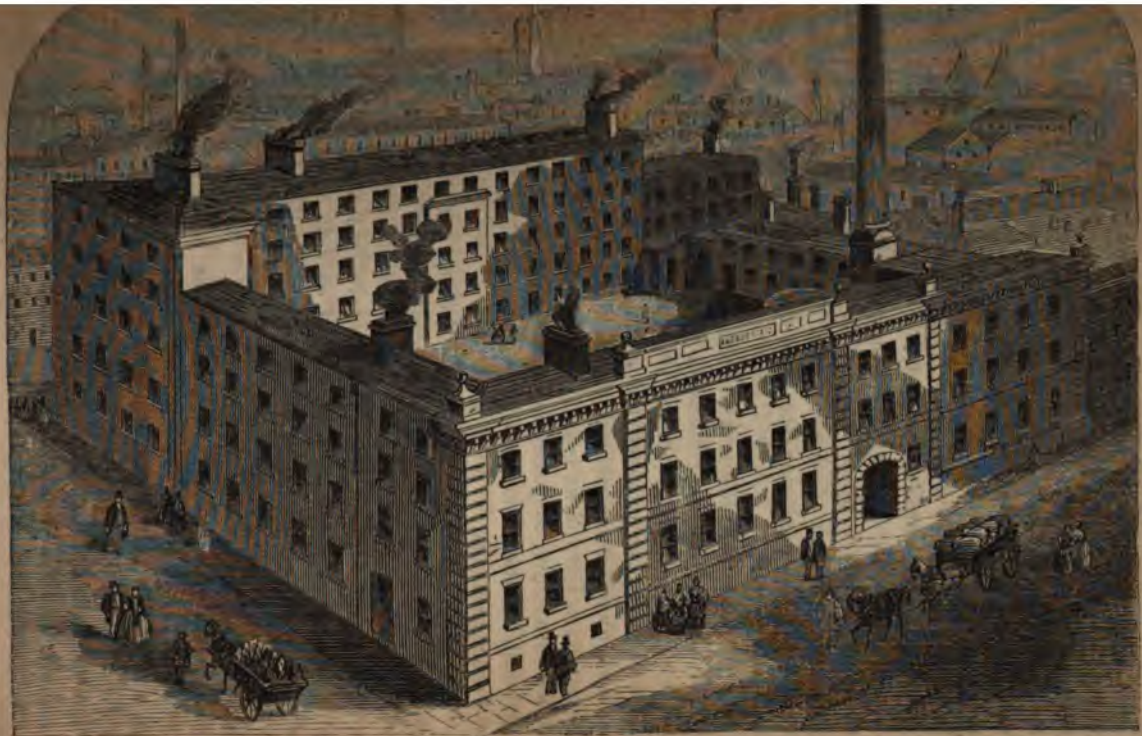
The Portobello and Mill Sands Hair-seating, Curled Hair, and Crinoline Manufactory of Messrs. Samuel Laycock and Sons.

The Portobello manufactory, being the central depôt, and of which an illustration is given with this notice, is situate in Portobello-street, commanding a fine open view of St. George's Church. The Mill Sands Factory (the original establishment of the firm for eighty years) is located on the banks of the river Don.

The manufacturing operations at the former place consist of hand and power-loom weaving and warp-dressing, hand-drawing and finishing; the latter place being chiefly devoted to hand-loom weaving, curling, sorting, carding, dyeing, and hand-warp dressing. Confining our remarks, for the present, to the Portobello Works, we would observe that, on entering the large quadrangle, the visitor proceeds at once to the Hair Depôt, where will be seen large quantities of raw material in the first stage of transformation; ascending from thence, we pass through the Drawing Rooms, where women are employed in hackling or drawing the hair of the various lengths required for manufacturing operations. In this branch of the business, the longer lengths being sorted out, the hair is then tied in bundles or locks, and passed over to the dyer, when, after undergoing the necessary processes for procuring the colour required, it is thoroughly washed and then ready for weaving purposes.

The hair most adapted for these requirements is imported by the firm from South America and Russia; but in some instances that of English production is equal in flexibility and strength.

Proceeding through the several rooms of the above department, we come to the main branch of the working operations, viz., the Weaving



THE PORTOBELLO MANUFACTORY OF MESSRS. SAMUEL LAYCOCK AND SONS.

DEPARTMENT; and gradually descending, we pass tier after tier of rooms occupied by workpeople all busily engaged in the horsehair-seating manufacture; and upon entering, the sight becomes more interesting and imposing, there being to each loom two operatives (the weaver and sewer), both eagerly and attentively engaged in their respective capacities; and here the visitor will observe that for every inch of cloth the shuttle makes from 125 to 130 passes, each hair being served and thrown separately.

After the weaver has completed the piece, it is examined and handed over to the PRESS ROOM, where it is finished by the aid of heated plates in a press, on which upwards of 100 tons' weight can be brought to bear, thereby producing the satin or glossy appearance so desirable in this texture.

In the PATTERN ROOM we noted the famous Jacquard looms, by which some of the most beautiful specimens were woven, and shown in the renowned Exhibition of 1851, and for which Messrs. Samuel Laycock and Sons obtained the medal, and we doubt not a similar collection will be contributed to the forthcoming Exhibition of 1862. HORSE-HAIR CRINOLINE is also manufactured at these works, a fabric, which in addition to possessing many advantages over other articles, applicable to the same purpose, is much less liable to danger from fire and other accidents.

We come next to the Mill Sands Factory, and would here comment upon the superiority in the manufacture of CURLED HAIR, to attain which the raw material is first passed through large carding machines, worked by steam-power (constructed expressly for the firm, from their own designs), after which it is handed over to the CURLING-ROOMS, and there twisted into rope; this being accomplished, it is boiled and stoved by a peculiar process, thus producing in the different qualities a finish for which this firm is so noted. We think the immense quantities of curled hair manufactured on these premises, for large contracts, Government purposes, and otherwise, is a sufficient proof of the successful result of the great advantages above referred to.

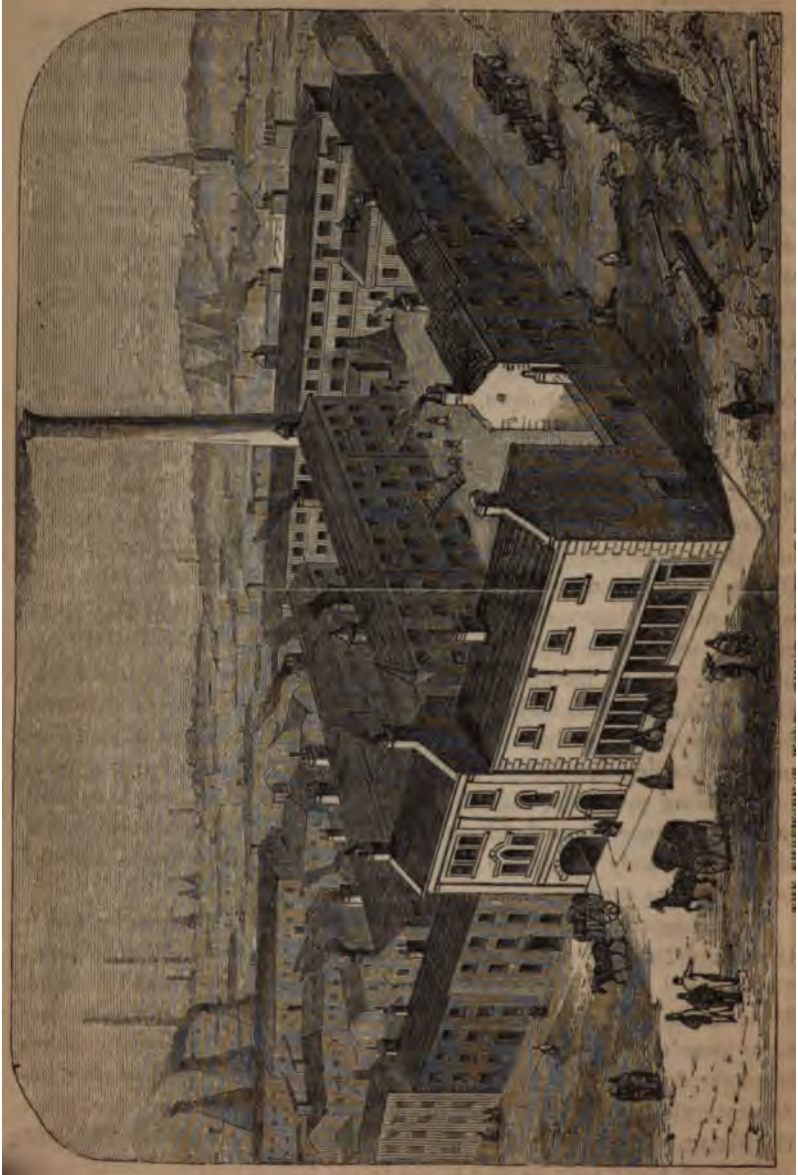
It would be impossible to visit a more interesting scene of industry than that presented at these works, and we must say we were highly gratified with our inspection, and pleased to see such general good order and conduct among the 600 hands employed in this establish-*ment.*

MESSRS. MARTIN, HALL, AND CO., SHREWSBURY WORKS, SHEFFIELD, SILVERSMITHS, ELECTRO PLATERS, AND SILVER, SILVER-PLATED, AND STEEL CUTLERY MANUFACTURERS.

The present proprietors of these extensive works are Messrs. Richard Martin, Ebenezer Hall, and Joshua Hall, who are the successors of one of the earliest (if not the very earliest) manufacturing houses in their trade. Their productions consist of Silver and Plated Tea and Coffee Services, Bread, Cake, and Card Baskets, Cruet Frames, Liqueur Frames, Pickle Frames, Egg Frames, Kettles and Stands, Hot Water and Claret Jugs, Waiters and Coffee Trays, Dish Covers, Entrée Dishes and Warmers, Meat and Venison Dishes, Soup and Sauce Tureens, Children's Cans, Butter Coolers, Mustard Pots, Salt Cellars, Muffineers, Inkstands, Candlesticks, Toast Racks, Sugar Baskets, Wine Coolers, Wine Strainers, Communion Services, Tea Caddies, Sugar Bowls, and Knives, Forks and Spoons of every description, including Fish Carvers, Fish Table Knives and Forks, Dessert Knives and Forks, and Cases containing Silver Knives, Forks, Spoons, Bowls, Mugs and Plates, for Christening Presents.

The premises are spacious and commodious, and fitted up with every convenience for the purposes of the business, comprising large and numerous Stamps, including one patented by the Firm; Flys or Presses, Dies, Turning Lathes and other Tools of various descriptions, in working which steam has been called into operation wherever it could be made available, especially, we may remark, in connexion with a blast for soldering purposes; indeed, every improvement seems to have been taken advantage of to facilitate the processes of manufacturing, and thereby not only economise the cost to the consumer, but assist the labours of the workman.

In passing through the workshops, we observed the means by which the flat sheets of metal were "raised" and "stamped" into form, "mounted," "buffed," chased or engraved, plated, gilded and finished, forming altogether a very pleasing and instructive sight, and conveying to us ideas that we had not previously entertained of the many stages through which even every-day articles have to pass before they are fit to decorate the table or side-board of the purchaser. We were also shown the Melting Furnaces, which are almost constantly in use, principally



for casting silver; Messrs. Martin, Hall, and Co. being the larges manufacturers of silver goods in Sheffield.

MESSRS. COCKER, BROTHERS, SUCCESSORS TO SAMUEL COCKER AN SON, ESTABLISHED 1752, MANUFACTURERS OF WIRE OF EVER DESCRIPTION, ALSO OF STEEL FILES, ETC.

The premises to which we more particularly allude, are the Wi Mills situated in Nursery-street, where also the Head Offices ar Messrs. Cocker, Brothers, have their Steel Melting and Convertin Furnaces at the Navigation Steel Works, and Tilting, Forging an Rolling Mills at the Wardsend Steel Works.

Steel-Wire Drawing has long been an important branch of th Sheffield trade, and the predecessors of the Messrs. Cocker were th first Cast Steel Wire Drawers in Great Britain; their articles in th particular branch standing in high repute not only in this kingdom, bu in the whole of the Continent of Europe.

Messrs. Cocker import their iron from Sweden, and manufacture th same into steel suitable for the various uses the wire is intended fo Having these facilities, they possess greater advantages over others i manufacturing their various articles, and we see them producing larg pieces of Cast Steel Wire for making into Ropes and Cables for Minin and Engineering purposes, as well as the finest wire used for manufa turing the delicate hair springs used in a lady's watch, also the Pinio Wire used for the delicate wheels of the same, and wire for all descri tions of needles, &c.

This Firm are very large manufacturers of Crinoline Springs an Steel, so extensively used within the last few years by the ladies; appears wonderful to see the enormous quantity manufactured and so by this House for this fashionable article alone.

We are informed that three First-Class Prize Medals were awarde to Samuel Cocker and Son at the Great Exhibition of Industry, Londo 1851, also a First-Class Prize Medal awarded to Cocker, Brothers, Paris, 1855, and since then the Society of Arts and Industry, Londo have awarded Messrs. Cocker, Brothers, a Medal of Honour. The honorary distinctions, although bearing directly in favour of Messr Cocker, reflect no small honour upon the town of Sheffield.

It may be observed in this place that the Sheffield manufacture carried off *above sixty medals at the* Great Exhibition of 1851.

VIEWS OF THE PREMISES OF MESSRS. COCKER, BROTHERS.

Messrs. Chadburn, Brothers, Opticians, etc., to H.R.H. the Prince Consort, Sheffield.

The manufactory is carried on at two separate establishments, th glass-grinding and heavier departments of turning, &c., at the Nurser Steam Grinding Wheel, and the lighter and finishing department at th Albion Works, Nursery-street, where the Warehouse, Sale Shop, and E hibition Rooms are. They have also a branch establishment at 71, Lor street, Liverpool. The manufacturing of spectacles and other optic instruments was carried on by the father and uncle of the present firn near the locality of the present establishments, nearly half a century ag The manufacture of philosophical instruments and models of engines, &c was commenced by the present firm about the time that Mechanics' Inst tutes were established in this country; but although the establishment such institutions did to some extent promote the sale of scientific appar tus, they would do little to support that branch of business. The model of locomotive and other engines which have been made at this establish ment have been sent to nearly all parts of the civilized world. The im provements in microscopes which have been effected since the commence ment of the present century have made that article a totally different in strument, so that the requirements of the anatomist and physiologist ar being satisfied. There has not been such a marked change in the con struction of telescopes; they have, however, been considerably improved to meet the requirements of the age. The frames of spectacles are nov very different articles from what they were some years ago. They wer then considered to be as light as they could be made to be durable an useful. Since then, however, they have been reduced to one-fourth of tha weight. The Jury of the Exhibition of 1851 especially expressed thei approbation at this particular branch of Chadburn, Brothers' manufac ture. Chadburn, Brothers, have invented or improved several articles o considerable utility, amongst which may be mentioned their Registere Garden Syringe, which contains a variety of roses and jets within th handle; also their Registered Portable Barometer: the cistern containin the mercury being of glass, is not liable to become leaky, and may b used in all climates, and is well adapted for marine purposes. The have also invented and patented a steam gauge, which is remarkable fo its simplicity, accuracy, and durability. They were induced to turn

4 6

GROUP OF INSTRUMENTS MANUFACTURED BY MESSRS. CHADBURN, BROTHERS.

their attention to this article from the demand experienced by them f a good metallic pressure gauge. The gauges may be seen at work the Crystal Palace, Sydenham, and most of the principal manufactori in the neighbourhood of Sheffield. They have also improved and regi tered an article which, if of less utility, is one of great interest at t present day, and illustrates the principle of binocular vision. The artic referred to is the Registered Stereoscope. They have invented and in proved several articles in connexion with that most interesting and im portant science, Photography. That part of the manufactory whic most interests strangers is the grinding of different sorts of lenses an spectacle glasses, which is carried on to an almost incredible extent this manufactory. The glasses, after being cut near the required siz with a diamond in the usual manner, are made round by the nipping o or abrasion with a kind of pliers or nippers: this is generally done b females; one of them will nip or round from sixty to seventy gross p week. The glasses are then taken to the Glass-Grinding Room, worked b steam power, and selected according to thickness, &c., for the differe radii or curves they are intended to be worked on, and are then cemente on to what is termed a block, which will hold from six to twelve doze glasses, according to the size and radius of the tool on which they a to be worked. The radius or curve of the tool will produce a glass of corresponding radius or focus; the shorter the radius or deeper curve tool will make the glass of greater magnifying power. When the glass have been ground into the required form with emery in the proper la or dish, and made quite smooth with the finest emery, they are polishe with a preparation of the oxide of iron, then taken off the blocks, an subjected to the same process on the other side. All the cement bein then removed, the glasses are ready to be put into the frames of spect cles. The annexed cut represents some of the articles of Chadbur Brothers', manufacture.

HENRY ROSSELL AND CO., WALLACE WORKS, STEEL CONVERTERS AN REFINERS, MANUFACTURERS OF FILES, ETC., AND GENERAL MERCHANTS.

The Wallace Works, formerly occupied by Messrs. Cammell and Co in Furnival-street, have been very much improved and extended b the present proprietors, who have added Steel Furnaces, Warehouse

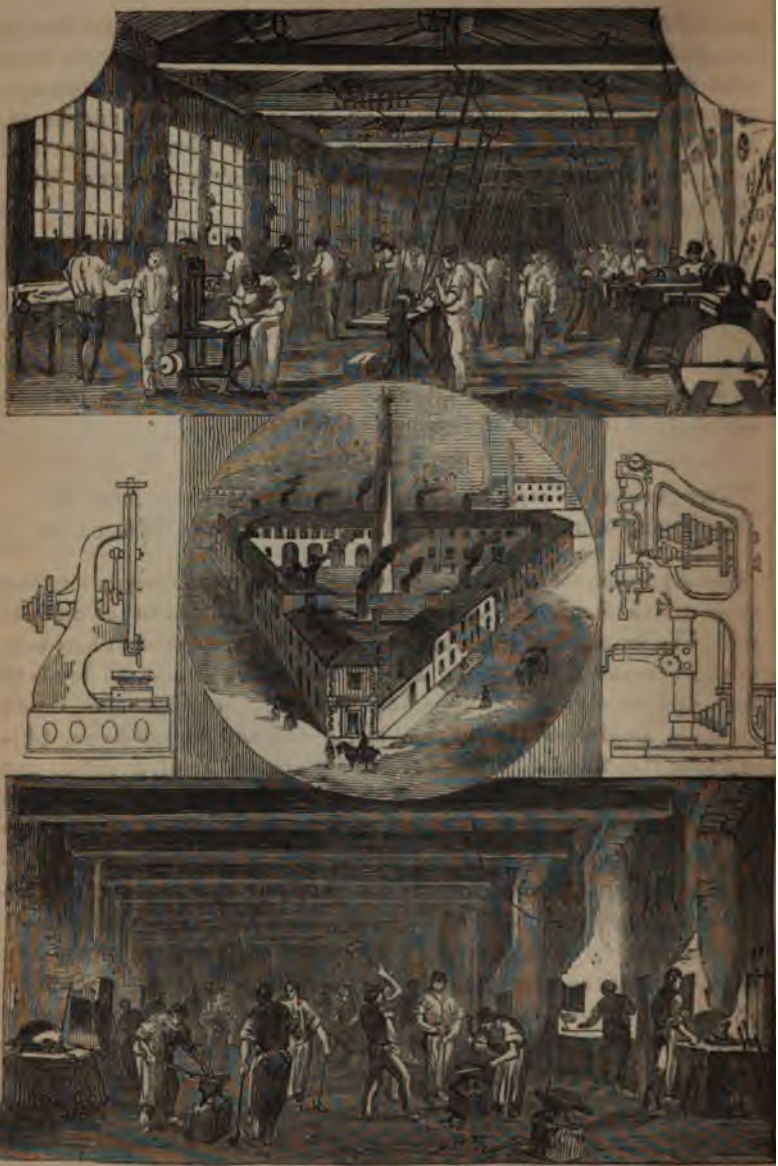
THE PROPERTY OF MESSRS. HERBT. ROSSELL AND CO.

&c., to the File Works. Messrs. Rossell and Co. manufacture
uantities of solid CAST STEEL HAMMERS, which, with their
nd FILES, are in great reputation among railway companies,
s, machinists, millwrights, &c., in this country and abroad.
also makers of a very superior quality of MILL CHISELS and
c., besides being exporters of Engineers' Tools, Saws, Edge-
utlery, &c.

eld is as completely the metropolis of steel, as Manchester is of
r Leeds of woollens. There is not a corner of the world where
ship is allowed to enter but could exhibit some specimens or
Sheffield steel goods. Visitors who may, through the courteous
on of Messrs. Rossell and Co., be permitted to see their works,
much gratified with the various processes which are pursued
d the admirable arrangements throughout.

ALBERT WORKS OF MESSRS. EASTERBROOK AND ALLCARD, NEERS, MACHINISTS, TOOL MANUFACTURERS AND MERCHANTS.

mportant manufactory known under the above designation, and
which Sheffield may justly be proud, is situated in the Suffolk-
The branches of the arts more particularly represented here con-
mproved MECHANICAL AND ENGINEERING TOOLS, all kinds of
nd Ratchet Braces, Screwing Tackle, Shifting Spanners, Coach
es, Engineers' Hammers, Vices, Anvils, and Smiths' Tools, Lift-
s, Hoisting Crabs, Railway and Platelayers' Tools, TURNING and
utting LATHES, Drilling, Planing, Slotting, Shaping, and Screw-
hines, and TOOLS OF EVERY DESCRIPTION. Many of these are
patents, and have spread far and wide among engineers the re-
of the manufacturers. It is in consequence of improved mecha-
angements in England that such a comparatively small country
d to manufacture goods cheaper, and with greater profit, than
one by the larger and more populous nations where mechanism
brought to less perfection, and labour is effected almost exclu-
manual agency. The emoluments derived from such mecha-
ilities are widely distributed, and influence more or less the whole
society in our country. It is to the unrivalled excellence of her
ry that Great Britain owes her predominating eminence among



VIEWS OF THE PREMISES OF MESSRS. EASTBROOK AND ALLCARD.

the nations of the world. Every thinking man must more or less frequently ask himself, when the perfection of mechanism will be achieved? when shall we have machinery and tools made to such nicety as will defy improvement? Until this point is attained we must persevere; and as skilled labour is so valuable, it is the constant object of our tool manufacturers to make the best of these advantages. Messrs. Easterbrook and Allcard have always put this principle into practice, and they have introduced many improvements which, with the *sterling quality* of their tools, have placed them in the foremost rank of manufacturers. The principal engineers in the kingdom are well aware of these facts, and they now find it a false economy to allow their workpeople to use old-fashioned tools, when others are to be had which will probably effect double the amount of work, and, in many cases, with greater ease to the workman.

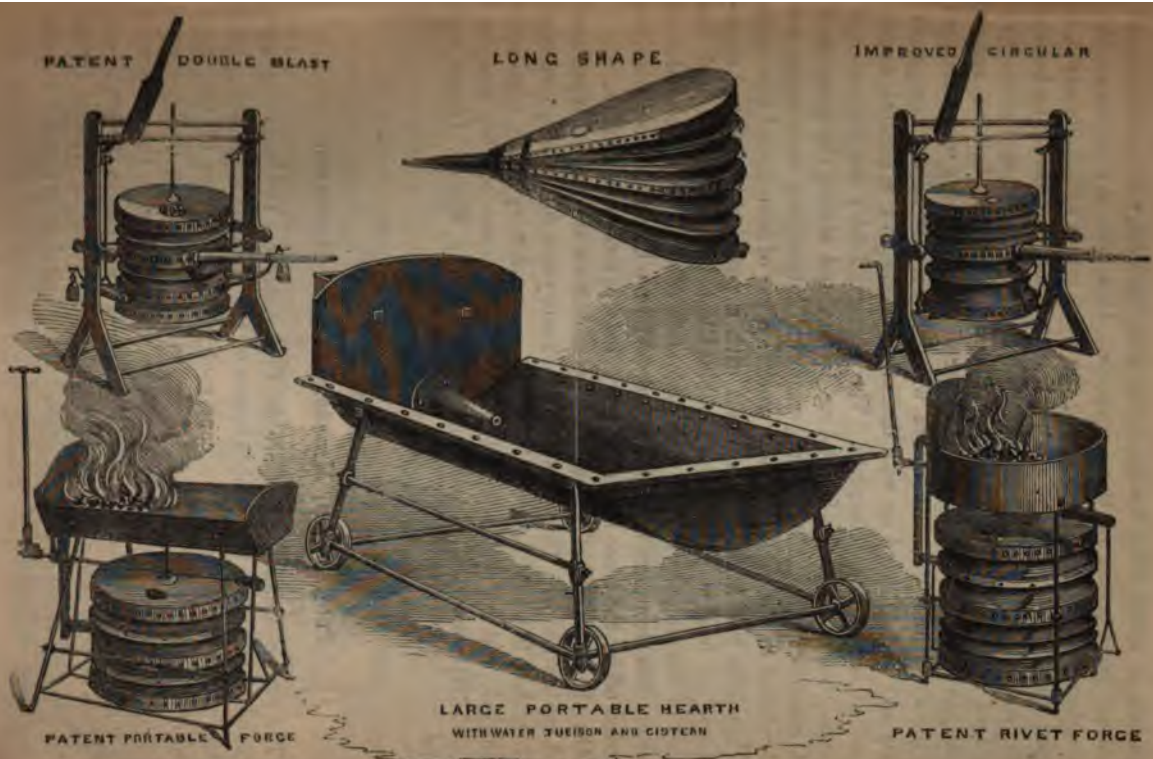
Sheffield has long been renowned for its superior manufactures of steel. The Turning Tool, the Chisel, the Hammer, the Tap and the Die, tools indispensable to the machinist, may be procured, of first-class quality, from Messrs. Easterbrook and Allcard. Not only is Sheffield cutlery demanded by the home and foreign consumer in preference to any other market, but the "Sheffield Engineers' Tool Trade" is becoming as highly esteemed throughout the civilized world. To enumerate the various articles manufactured at the Albert Works would be impossible in our limited space; we would recommend the traveller who wishes to have a good knowledge of Sheffield industry to visit the interesting works of Messrs. Easterbrook and Allcard, and satisfy himself on many points to which we have merely been able to allude briefly. By the aid of very simple but ingenious contrivances, many of the ordinary mechanical appliances of the workman have been rendered much more effective. For instance, with regard to the ADJUSTABLE BENCH VICE patented by Messrs. Easterbrook and Allcard, the observer will remark how much has been done towards perfection in this case. By the very simple but beautiful application of the ball and socket-joint principle added to one of the legs, the jaws adapt themselves to any shaped object that a workman may wish to grip, however taper or conical, and does equally well for holding any parallel object. Here, none of the useful points in the old vice are lost, but some important ones are added, that of being able instantly, by a self-adjusting motion, *to grasp* a taper object, and securing

also the firmer gripping of any parallel object than by the old staple vice. So, likewise, with the *Steel* Brace, a beautiful, light, and graceful tool; being made of solid cast steel, it is found stronger, at one-half the weight, of the ordinary Scotch iron brace. Under the same description of what is properly termed "Shop Economics," we find Easterbrook and Allcard's Patent Ball *Ratchet Brace*, which possesses all the advantages of the ordinary Ratchet Brace, while it can be used to bore in positions where a brace with a straight-sided Ratchet Wheel would be inapplicable.

We could multiply instances of similarly improved mechanical contrivances invented by Messrs. Easterbrook and Allcard, but we have exceeded the space allowed to us in these pages, and we must leave our friends to observe for themselves, merely remarking that a friendly reception will be given to all who visit the Albert Works, and any explanations required will be most readily given by the esteemed and talented proprietors.

Messrs. Thomas Linley and Sons, Patentees, Manufacturers of the Double Blast Circular Bellows, Improved Single Blast Circular, Portable Forges, etc.

These extensive works are situated in Stanley-street, and have been established at Sheffield upwards of a century. The present proprietors are Messrs. John and William Linley, men distinguished for their ability in the arts under their control, and for their benevolent character. These gentlemen are the holders of several valuable patents, amongst which we may mention their Double and Single Blast Bellows, which they manufacture largely for railways, engineers, whitesmiths, blacksmiths, and machinists. They are also manufacturers of the Patent Portable Forges, famed throughout Europe for their unrivalled power of blast; for their surpassing excellence of quality, construction, compactness, and portability, effecting a saving of twenty per cent. in fuel. Of the portable forges, there are three classes: one for general purposes, one for boiler-makers, and one for steam-ship builders. The Government purchase largely of these articles for colonial purposes. They are extensively used at the Australian diggings, and in all parts of the world. In the materials used in the manufacture of these articles, Messrs. Linley and Sons are extremely careful. The best English leather and dressing hides are employed, unlike the



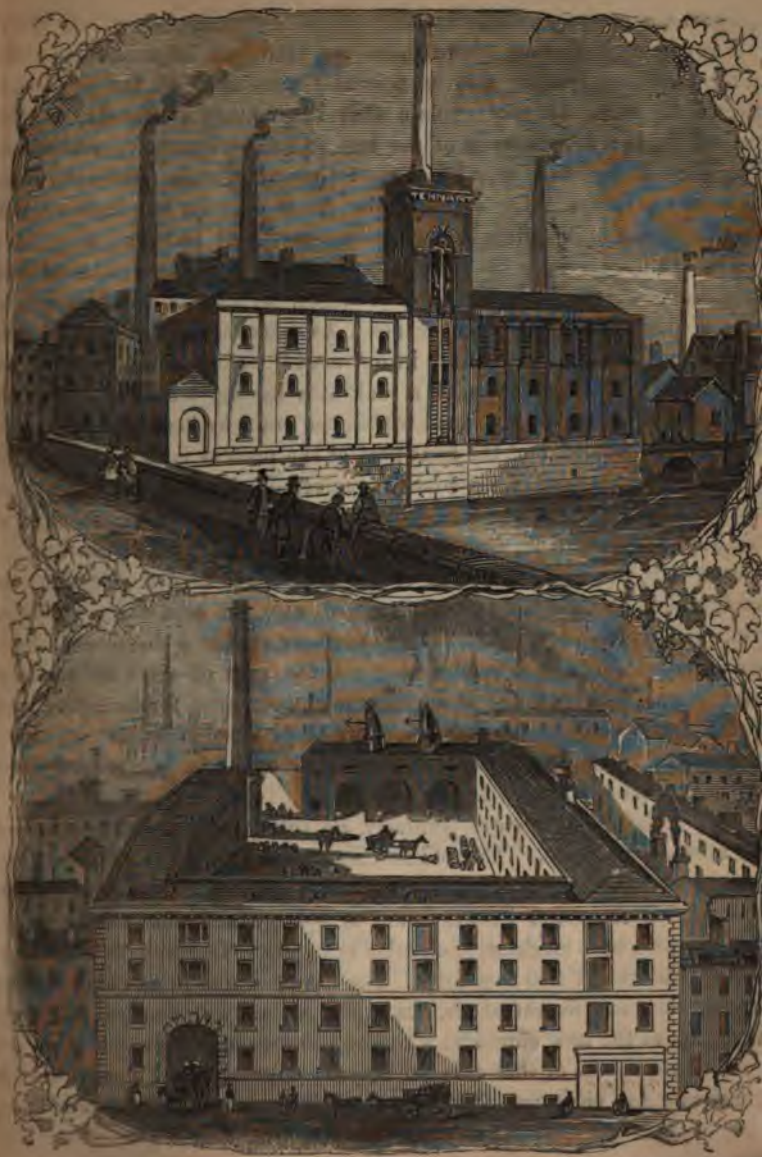
SPECIMENS OF ARTICLES MANUFACTURED BY MESSRS. THOMAS LINLEY AND SONS.

practice of many other houses in the same business, who entirely ig commercial morality in these respects. This firm is also the sol exception in the trade, for covering the wood inside with roller-skin order that if the climate of any particular country in which the bel are used should be hot, and cause the wood to warp or open, the s protect it, and thus the valuable properties of the bellows re unimpaired. Messrs. Thomas Linley and Sons are also manufactu of the PORTABLE VICE BENCH, of wrought iron, for railway compa This may be had fitted up with drilling-machine and a general as ment of bench tools complete. The Messrs. Linley are inventor several contrivances for facilitating labour, and aiding the progre art manufactures. A novel and somewhat interesting experiment introduced to our notice at these works: a bar of iron heated to a of ignition, was brought in contact with a powerful stream of a spheric air from a pair of the Double Blast Bellows, which had effect of keeping the iron in a perfect state of combustion, globule molten iron dropping from it as if dipped in oil, and the scintillat carried off by the force of air formed quite a pyrotechnic display.

On the premises of Messrs. Linley and Sons are large carpen and smiths' shops. There are also enormous yards full of seasoned Altogether, it would be difficult to find a manufactory more admir managed, and so well adapted to all the purposes of the busi About fifty workmen are constantly employed by Messrs. Linley Sons.

THE EXCHANGE BREWERY;
PROPRIETORS, MESSRS. TENNANT, BROTHERS.

The premises under notice are in Bridge-street. The buildings v erected in 1852, but the establishment of the business dates from 1 New offices are soon to be constructed in the centre of the l quadrangle belonging to the Brewery, with a frontage in Bridge-st Through this portion of the premises we will invite the reade accompany us, on a visit to one of the largest breweries in the provi We pass at once into the large STORES, which cover an expanse (w complete) of 5,000 square yards, and almost rival in extent the fa storehouses at Burton.



VIEWS OF THE ELEANOR BREWERY OF MESSRS. TENNANT, BROTHERS.

From the stores we ascend to the

FERMENTING ROOMS, where there are thirty-six large squares. In order that our readers may understand somewhat of the processes carried on here, we may explain that the famous INDIA PALE ALE brewed by this firm is made of the best and most expensive materials. The stock of Kentish hops on the premises of Messrs. Tennant, Brothers, is enormous. These are of the finest description, such as the best hop-growing districts in our country may well be proud of.

The main object in brewing is to extract from corn a sweetish substance, which, when boiled with water, fermented, and otherwise heated, shall constitute beer or ale. As a means of facilitating this operation, the corn is converted into "malt" before being brought to the brewery; the processes of a malt-kiln having for their object to change the nature of the meal within the grain by heat and moisture. The malt is ground, and the next part of the process is the *mashing*, by which, with the aid of machinery connected with the mash-tun, the wort is produced. When the whole of the wort is run into the copper, the hops are thrown in, and the *boiling* commences. When the boiling is complete, the whole contents of the copper are turned into the *hop back*, which has a false bottom, made of wire, for separating the hops from the boiled wort. After the goods have settled a short time, they are pumped through a refrigerator, at the rate of sixty or seventy barrels per hour, into the stone saucers above named for fermentation. Yeast is now added, and in four or five days attenuation is complete, after which it is allowed to settle a short time, and is then rocked into the casks, fined, and sent to the customer.

The premises of Messrs. Tennant, Brothers, are admirably adapted for business purposes. The MALT CHAMBERS are in the tower, which is seen so prominently in the surrounding country. The COOPERAGE is detached from the Brewery, and is a large and convenient place stocked with new machinery, circular saws, &c. To reach this we pass through a tunnel 210 feet long. The Cooperage is joined by gigantic stores, cart and wagon sheds, &c. The visitor will admire the construction of the new chimney, which is 120 feet in height.

The proprietors of this colossal brewery superintend the works with great care and vigilance. The *practical* Brewer is Mr. Robert Moore, son of Mr. Thomas Moore, one of the firm. The gentleman has

named is the inventor of one of the most perfect Refrigerators we have seen.

For additional information respecting this important town, we refer the reader to our agent, Mr. Thomas Rodgers, the eminent bookseller, of whom may be purchased local Guides.

On leaving Sheffield, the traveller can pursue his journey to Manchester, if he be so inclined, by the

SHEFFIELD AND MANCHESTER LINE,

by Penistone, 14¾ miles from Sheffield. From Penistone there is a branch line to Huddersfield (which is described in our Guide to the North-Western Railway). From Penistone to Manchester the distance is twenty-eight miles, and the intermediate stations are—HAZLEHEAD, DUNFORD BRIDGE, WOODHEAD, HADFIELD, DINTING (station for Glossop), MOTTRAM, NEWTON (station for Hyde), GUIDE BRIDGE (station for Ashton and Staleybridge), FAIRFIELD, GORTON, and ARDWICK.

MANCHESTER. We read of Manchester from the earliest period in the history of this country. "In the time of the Druids it was distinguished as one of the principal stations of their priests, and celebrated for the privilege of sanctuary attached to its altar." Before the Christian era it was one of the principal seats of the Brigantes, who had a castle, or stronghold, called *Mancenion*, or the place of tents, near the confluence of the Medlock and Irwell, and still called "Castle Field." Under Agricola, about the year 79, this spot was selected as the station of the *Prima Frisiorum*, and called *Mancunium*: hence its Saxon name *Manceastre*, from which Manchester is derived. This station was occupied by the Romans for nearly four centuries. The camp was well supplied with all necessaries; a water-mill stood on the Medlock, and on its site we have Knot Mill. Roads branched off from this centre to various Roman stations, and thus the town from early times was favoured with superior means of communication. Across the site where the castle once stood runs the Manchester South Junction and Altrincham Railway, which joins the

Liverpool-road Station and the London-road Station of the London and North-Western Company. There may yet be seen a portion of the old Roman wall. The ground is now owned by the Earl of Ellesmere.

LONDON-ROAD STATION, MANCHESTER.

About 488, when through the internal weakness of Rome her soldiers had been withdrawn, a party of Saxons forcibly established themselves in this part of the country. In 620 it was captured by Edwin, King of Northumbria, and annexed to his dominions. In 627 the inhabitants were converted to Christianity by the preaching of Paulinus, and a church was built and dedicated to St. Michael. Manchester was taken by the Danes about 920, but wrested from them by Edward the Elder, who fortified the castle and rebuilt the town. In the reign of Edward I. the barons, in order to raise a greater number of men to serve in the army destined for the invasion of Scotland, conferred several privileges on their vassals; and Thomas de Gresley, sixth baron of Manchester, upon that occasion granted those rights and immunities which have been emphatically called the "Magna Charta of Manchester." It is said by Whitaker that the woollen trade had been introduced from *Gaul before the* Roman invasion. In 1352 the manufacture of "Man-

er cottons" was introduced. Edward III. brought over numerous ish artisans, who settled in the town, where, finding every site, they brought the woollen manufacture to very considerable ction. When Philip of Spain threatened to invade England, hester supplied 144 men armed with bills and pikes, 38 archers, 38 arquebusiers, to assist in repelling the "Invincible Armada." next find Manchester the head-quarters of General Fairfax, in ; the people having in vain attempted to prevent the war, declared he Parliament. In 1745, Prince Charles Edward marched upon own with 6,000 men. His head-quarters were at a large house Market-street, which was subsequently styled the "Palace Inn." s pulled down a few years ago, and the site is now occupied by Manchester warehouse." Manchester has been visited by various personages, among whom was Nicholas, the late Emperor of ia, in 1817, who came to inspect the aqueducts and excavations orsley, and the works connected with the Duke of Bridgewater's . About the year 1740, the manufacturers employed agents in rent parts of the country to procure a supply of raw cotton. t 1760, their goods found a market in America and in Europe. e quantity of weft produced was insufficient to keep the hands oyed in other departments, recourse was had to machinery, and John Kay invented the *picking peg*, by which the workman was led to produce twice the quantity, and to weave cloths of any h. These improvements acted upon the demand for yarn, and spinning jenny was invented by Mr. Thomas High, in con- tion with Mr. Kay. Mr. Hargreaves greatly improved this inery, until the hand-workmen became alarmed, and destroyed machinery. Sir Richard Arkwright subsequently improved the inery in use, and Sir Robert Peel, Bart., assisted by Mr. Har- ves, brought into use the cylindrical carding engines, and in r ways adapted machinery to the cotton manufacture. The r-loom was the invention of the Rev. Mr. Cartwright. Mr. son's machine for dressing the warps greatly aided the intro- on of the power-loom. In 1780 the spinning mule was first duced for the manufacture of muslins.

REETS.—Market-street runs nearly east and west, the Exchange g at the lower or western, and the Infirmary at the higher or

eastern extremity. Either of these buildings will serve as a land mark for the stranger in Manchester; especially as nearly all th omnibuses to the various suburbs take their departure from som point in Market-street, situated between the two. Taking the Ex change as our central point, it will be found that Victoria-stree running in a northerly direction, leads directly to the Fruit and Fis Markets, the Cathedral, Chetham's College, the Victoria Railwa Station, Strangeways, Broughton, Prestwich, Besses'oth Barn, White field, and Bury.

At the distance of about one hundred yards along this route, th Victoria Bridge, to the left hand, gives a passage into Salford; an some four or five hundred yards further, at New Bridge-street, ther is also on the left hand, another road into Salford by Waterloo Bridg (halfpenny toll), and opposite to it a road leading up the ascent t the Manchester Union Workhouses, from which there is a direct roa to Chetham-hill in a northerly direction; or Chetham-hill may b reached by the omnibus route along Corporation-street to Duci Bridge over the Irk, and so by the Union Workhouses to the sam point.

By Market-street and Piccadilly is the road leading to the Infi mary, many of the hotels, the London-road Railway Station, Ardwick green, Longsight, Levenshulme, and Stockport. To the left fro this route, High-street leads to Shudehill, Smithfield-market (a the right), Rochdale-road, Queen's Park, Harpurhey, Barnes-green Blackley, Middleton, and Rochdale; Oldham-street, from opposite th Infirmary, leads to Great Ancoat-street, Oldham-road, Newton Heath Philip's Park (to the right), Failsworth, Hollinwood, and Oldham.

Travis-street, branching to the left about a mile from the Exchange leads to Ancoats, Gorton Andenshaw, Fairfield (where there is settlement of Moravians), Ashton-under-Lyne, Dukinfield, and Staley bridge; and Hyde-road, diverging slightly to the left at the upper en of Ardwick-green, leads to the Borough Gaol, Belle Vue Gardens Gorton, Denton, and Hyde. To the right from Market-street an Piccadilly, Mosley-street and Portland-street are direct communica tions with Oxford-street, leading to the Oxford-road Railway Station All Saints' Church, Stretford New-road (leading to Old Trafford Greenheys, Withington, Didsbury, and Cheadle.

Cross-street, leaving Market-street to the right, close to the E change, will also lead to Oxford-street; but the passenger should b careful to turn to the left at Peter-street, St. Peter's Church at th lower end of Mosley-street being a good landmark and guide. I Peter-street, the Concert Hall, Natural History Society's Museu Theatre Royal, and Free-trade Hall are all to be found. In a weste direction from the Exchange, St. Mary's Gate leads to Blackfria Bridge and Salford. From St. Mary's Gate, Deansgate leads Bridge-street, Campfield, and the Free Library, Knot Mill Railwa Station, Hulme, Old Trafford, Stretford, Altrincham, Bowdon, Knut ford, and Warrington. Lower King-street, a continuation of Kin street, leads to Albert Bridge, the New Bailey, New Bailey-stre Station (to the left along Chapel-street), Salford, to the Salford Tow Hall, the Roman Catholic Cathedral, the Crescent, Peel Park (co taining the Borough Museum and Free Library), Pendleton, Eccle and Bolton.

From the Exchange by St. Mary's Gate and Blackfriars Bridge lea into Chapel-street; and, turning to the right, Greengate is reache and the road through Salford by Broughton Bridge (halfpenny toll to Broughton and the Race-course.*

Railway Stations.—Manchester is the centre of an immense ne work of railways and canals. The terminal passenger stations a four: the *Victoria Station*, at Hunt's Bank, the joint terminus of th London and North-Western, and of the Lancashire and Yorkshi (now including the East Lancashire) companies, is that at whic travellers from Liverpool, Preston, Bolton, Huddersfield, Leeds, &c would arrive. It is situated about a quarter of a mile from th Exchange, and the approach to it is by the railway bridge represente on page 371.

The *London-road Station*, at which the London and North-Weste trains from London, Crewe, Macclesfield, Derby, and Chester, &c., an those of the Manchester, Sheffield, and Lincolnshire, from Sheffield Hull, Grimsby, Retford, and generally from the eastern and south eastern counties, find their terminus. The road from the statio

* For many useful particulars in this account of Manchester, we are indebted to th intelligent shilling "Handbook" of Messrs. Hale and Roworth, invaluable to the tourist also to the pages of the "Builder," a serial admirably conducted by Mr. Godwin.

leads directly to the Exchange, distant about three-quarters of a mile.

The *Oxford-road Station* is the terminus of the Manchester, South

VICTORIA STATION, MANCHESTER.

Junction and Altrincham Railway, and passengers from Bowdon, Knutsford, Lymm, and Warrington would arrive at it.

The *New Bailey-street Station* in Salford is used by the East Lancashire Company, and passengers from Bury, Bacup, Accrington, Colne, &c., are there set down.

Hotels. — The leading hotel, situated in Piccadilly, near the London-road Station, is the *Queen's*. There are numerous other good hotels, commercial houses, and temperance establishments.

Public Buildings.—The *Royal Exchange* is a handsome and commodious edifice, erected of Portland stone, between 1845 and 1846, at a cost of £120,000. Besides the great room in which the subscribers meet to transact business, there are two large galleries, and a number of other rooms and offices.

The *Stock Exchange* is situated in the Royal Exchange Buildings.

The *Corn Exchange* is in Hanging-Ditch. The elevation is copied *from that of the Temple* of Ceres.

The *Branch Bank of England* has its principal front in King street. There are numerous other banking establishments in Manchester.

RAILWAY BRIDGE, VICTORIA STATION, MANCHESTER.

The *Town Hall* is also situated in King-street. It is a handsome stone structure, and contains the Corporation Library, with a very valuable collection of books and parliamentary papers. The building cost £28,000. The general design is said to have been taken from the temple of Erectheus at Athens, and that of the dome from the octagonal tower of Andronicus, known as the Temple of the Winds. The large room for meetings is decorated with a series of portraits of eminent citizens.

The *New Assembly Rooms*, close to the Town Hall, were opened in December, 1859. The cost of this building was about £14,000. It is perfectly plain in its exterior. The ball-room is 81 feet long, 40 feet wide, and 40 feet high. The decorations of the interior are very rich and striking.

The *Chancery of the County Palatine of Lancaster* is in Norfolk street. The sittings of the Court are held in the Town Hall.

The *City Gaol*, situated in Hyde-road, is an extensive erection, completed in 1850, at a cost of £88,903 11*s*. In 1851 it was further enlarged.

TOWN HALL, MANCHESTER.

The *New Market Hall*, which cost £5,000, was opened to the public in December, 1858. It is in connexion with the covered market in Smithfield. It is built of stone, and fronts Swan-street, Eagle-street, Goadsby-street, and Coop-street. There is an entrance from each street.

VICTORIA BRIDGE, MANCHESTER.

The *Victoria Bridge*, opened in 1839, cost in building £10,800,

and in addition, for widening the approaches, £10,000. This bridge is disfigured by an appendage to the parapet in the shape of a ball and cross.

The *New Bailey Prison*, in Salford, situated close to Albert Bridge, is the House of Correction for the Hundred of Salford. Originally built in 1790, according to the plans of Howard, it has been increased at various times, until the ground it stands upon, nearly six acres, is almost covered with buildings.

The Manchester Free-trade Hall, in Peter-street, of which we annex a representation, in character somewhat approaches the

FREE TRADE HALL, MANCHESTER.

Venetian-Italian style of architecture. It occupies the site of a former building bearing the same name, and presents as great a contrast to its predecessor as could well be imagined. The new Hall was publicly inaugurated Oct. 1, 1856. The Hall has a frontage to Peter-street of 160 feet, and the total elevation is 75 feet. The Great Hall is 135 feet long, 78 feet wide, and 52 feet high, and affords space for 4,600 persons. The *decoration of the* room is exceedingly rich;

there is ample light from the roof to fit it for day meetings, and the mode of lighting by gas for the evening is both novel and effective.

The *Royal Institution*, Mosley-street, is an establishment creditable to the taste and munificence of this great manufacturing city. We are glad to hear that the debt at one time existing is now almost extinguished, owing to the educational progress of the school. During one year 549 pupils had attended. Art pupil teachers have taught within the same period, 800 pupils of parochial schools, and certified teachers, 2,451, giving a total of 3,800.

As to the architecture in the streets of Manchester, there are few towns, we imagine, where the realization of effect bears so trifling a proportion to the endeavour, and indeed to the merit of the art. The nearly constant rain, and the general smokiness, produced perhaps, in some measure, by the kind of coal, and great waste in ordinary house fires, combine to produce an effectual screen during bad weather. As regards the atmosphere, we believe it has been computed that 2,000,000 tons of coal are consumed within Manchester and Salford during twelve months; and that, as one result, a quantity of the strongest sulphuric acid, amounting to 36,000 tons, is formed in the air in the same period. As to the larger contributants to the unsightly and health-destroying nuisance, it may be remarked that often a single chimney gives forth the smoke of 120 or 150 tons of coal each week.

Drinking fountains have been erected in various parts of the city by Robert Barnes, Esq., as also one by Mr. Alderman Haywood, at the New Cross.

From the recent extensive works for the improved water-supply of Manchester, the city obtains its supply. The water is obtained from a "gathering-ground" of nearly 20,000 acres; the reservoirs form a chain of ten artificial lakes, stretching for upwards of four miles, near Woodhead, in Longdendale, and capable of containing 600,000,000 cubic feet of water. Only the pure water supply is conveyed to the city; the turbid water being stored in distinct reservoirs for mill purposes.

Ecclesiastical Edifices.—The present Cathedral, originally a collegiate church, was erected in 1419, at the expense of Thomas de la Warre, then rector of the parish. The foundation survived the changes which destroyed so *many establishments* of a similar nature,

and in 1830 consisted of a warden, four fellows, two chaplains, a clerk in orders, and a lay clerk. By the 10th and 11th of Victoria, c. 108, Manchester became the see of a bishop.

The Cathedral is by far the finest and most interesting of the Manchester ecclesiastical structures. A very considerable portion dates from the fifteenth century, and the interior effect is remarkably fine. The chancel is divided from the nave by a screen with iron gates. The stalls in the choir are of remarkable beauty, the under sides of the seats being ornamented by grotesque carvings. Over the altar is a fine piece of needlework, representing the story of Ananias and Sapphira. The monuments are numerous, one of the latest being a fine memorial statue of Humphrey Chetham, the founder of the Hospital and Library bearing his name. It has accommodation for 3,000 worshippers. The soft red stone of the exterior has long been in a decaying state, and has necessitated frequent repairs.

The restoration of the south side of the clerestory of the Cathedral has been successfully accomplished.

The bishop of the diocese is the Right Rev. James Prince Lee, D.D., 1848; residence, Mauldeth Hall, near Manchester; income, £4,200.

To enumerate the churches in Manchester and Salford would be impossible in our limits. They are all more or less well adapted to the requirements of the increasing population amongst which they are situated.

We may mention, for the information of the curious, that *St. John's Church*, in Byrom-street, possesses a monument by Flaxman, and the vestry contains some good paintings. In *St. Peter's Church*, Mosley-street, is a picture said to be by Annibal Caracci.

In several recent churches or chapels in Manchester, modifications of a style of architecture not Gothic are to be observed. The Church at Miles Platting, designed by the late John E. Gregan, is one in which round arches, an apsidal east end, a square tower, and brickwork corbelling to parapets, are used, Mr. Walters' Independent Chapel, at Knot Mill, is nearer to the Venetian-Italian type.

The new Church of St. Mary, Crumpsall, Chetham-hill, is in the style of the geometric decorated.

A *Jews' Synagogue* has lately been completed on the Chetham-hill-road. The effect of the coloured brickwork, and the variety in the forms of the windows, &c., are good.

The Dissenters have numerous chapels in Manchester and Salford.

LEARNED SOCIETIES.—Among these are the *Literary and Philosophical Society*, established in 1781, which has premises in George-street. Of this society the eminent John Dalton was president from 1817, until his death in 1844. The *Geological Society*, founded in 1838, has its museum combined with that of the Natural History Society in Peter-street. The Museum is open, free of charge, to the public. The *Statistical Society*, Ridgefield, was established in 1833. The *Law Association* has premises and a Library in Norfolk-street. The *Chetham Society*, formed in 1843, has for its object the publication of inedited documents connected with the history of Lancashire and Cheshire. The *Photographic Society* has been established within a late period.

CEMETERIES.—The first cemetery established in Manchester was that in Rusholme Road. The *Harpurhey Cemetery* covers a space of about eleven acres, and is situated upon the Middleton Road. The *Ardwick Cemetery*, containing about eight acres, is upon the Gorton Road. The remains of the eminent philosopher, Dalton, were interred here. The *Salford Burial Ground* has been recently opened; the first interment, in January, 1857, having been that of the late Joseph Brotherton, M.P.

MONUMENT TO BROTHERTON, IN THE SALFORD BURIAL-GROUND.

LIBRARIES.—The *Free Libraries* of Manchester and Salford are institutions most honourable to the prosperous inhabitants of those places. The Salford Library contains in the reference and circulating departments upwards of 20,000 volumes. The *Manchester Free Library* contains upwards of 50,000 volumes. Besides these libraries, Manchester has the *Chetham Library*, the oldest Free Library in the kingdom, with upwards of 20,000 volumes,

and numerous subscription circulating libraries of from 15,000 to 30,000 volumes each. What a reflection upon London is this state of things in Manchester! The building in which the Chetham library is placed dates from the time of Henry VI.

The *Royal Museum and Library* is in Peel Park, Salford. The *Manchester Mechanics' Institution*, the *Foreign Library*, and the Law Library, possess a large number of valuable works.

LITERARY, EDUCATIONAL, AND OTHER INSTITUTIONS.—Chetham's Hospital, founded under the will of Humphrey Chetham, who died in 1653, was established for the clothing, maintenance, and education of forty poor boys. This number has been augmented at various times as the income of the Hospital has increased, and is now 100. The *Manchester Free Grammar School* was founded early in the sixteenth century, and is richly endowed with various scholarships. The *Owens' College*, Quay-street, was established in 1851, under the will of John Owens, a Manchester merchant, who died in 1846, and left about £100,000 to found an institution for educational purposes. The *Lancashire Independent College*, for the education of ministers of that denomination, is situated at Withington, on the Old Trafford side of Manchester. The *Manchester Commercial Schools*, in Stretford New-road, were established in 1845, by the Manchester Church Education Society, for the purpose of affording a sound education for children of the middle class at a moderate expense. We can but mention among many other excellent institutions, the *Manchester Evening College*, the *Working Men's College*, *Catholic Collegiate Institute*, *District*, *Ragged*, and *Industrial Schools*, and various *Mechanics' Institutions*. Among the latter, we must particularize the Manchester Mechanics' Institution, established in 1824, which, until lately, occupied premises in Cooper-street, and was the first building erected in England for this special purpose.

The *Working Men's Club House*, at Salford, established by the rector and curate of St. Matthias, is an excellent institution, and should lead the way to similar undertakings in every part of the United Kingdom. Two of the largest and best cottages in the parish have been thrown together to form a club-house; it is well lighted with gas, and is substantially furnished, so as to be a thoroughly comfortable place of resort, where the working man may have far greater advantages than

any public-house can afford, without any of its dangers. The club

WORKING MEN'S INSTITUTE AT SALFORD.

house contains a committee-room, a conversation-room, a workin room, a news-room, and amusement-room, where chess, draughts, &c

THE INFIRMARY, MANCHESTER.

are provided, and a library and class-room. Reading and writing classes have already been formed with success.

The subscription, entitling to all the privileges of the club, is only *one penny per week*. Coffee is supplied to members at cost price. A penny bank has been established in connexion with it.

The Charitable Institutions of Manchester are, as might be expecte very numerous. Conspicuous among them is the Royal Infirmar founded in 1752, a highly meritorious and useful establishment. Th building has been frequently enlarged. The open space in fron formerly occupied by a pond of water, was given up to the Corporatio and is now laid out as a public walk, with fountains, which were fir displayed at the inauguration of the Wellington Statue in 185 This figure, which represents the Duke in civil costume, and as h appeared in advanced life, is placed at the eastern end of the espl nade, and is of colossal proportions. Opposite to the princip portico of the Infirmary is a statue of Dalton, a copy in bronz by Theed, of the marble statue of the philosopher by Chantrey, whic is placed in the hall of the Royal Institution. At the Mosley-stre end of the esplanade there is a bronze statue of Sir Robert Peel, b Marshall.

An institution for the reception and education of deaf and dum infants has been lately opened at Old Trafford, near Manchester, an is considered to be the only one of the kind in the world. Th structure adjoins the Botanic Gardens, and is assimilated in exterior t the Tudor style of Henry VIII.

No city of similar size in the world can equal Manchester in th number and importance of its institutions, literary, scientific, an charitable. A list of these will be found in the "Manchester Churc Calendar and General Almanack for 1861," a most useful and car fully prepared annual, published by Messrs. Hale and Roworth, Kin street.

Places of Recreation.—The *Public Parks* owe their establishme to the liberality and public spirit of the Manchester people. The were purchased, laid out, and adapted to their purpose by subscriptio raised among all classes, and were, when complete, handed over 1845 to the Corporation of Manchester, in trust, for the perpetual u of the inhabitants. The Corporation has now the care of two of the parks, the Queen's Park, Harpurhey, and Philip's Park, in Bradfor road. The third, Peel Park, being within the borough of Salford, w transferred to that Corporation in 1846. *Peel Park*, one mile we from the Exchange, is pleasantly situated on the banks of the Irwe and has the advantage of an extensive prospect over Broughto

Kersal, and Prestwich. It contains about thirty-two acres of ground The Salford Royal Museum and Library are situated in this Park The inauguration of an addition of a new wing to the Museum, and the erection of a statue to Her Majesty, in May 1857, in that place of popular resort, was an event for the inhabitants. The statue is placed directly in front of the new wing of the Museum.

STATUE OF HER MAJESTY (BY NOBLE), PEEL PARK, SALFORD.

A memorial arch forming the entrance to Peel Park, has been erected in commemoration of the Queen's second visit to Manchester, July 1, 1857. The design is by Mr T. G. Barker, architect of Salford. In style it is called Byzantine, and consists of a central and two side arches. It is flanked by octagonal towers, crowned by cappings, giving them a minaret appearance, and rising to the height of 53 feet 6 inches from the ground. Over the arch is considerable space, varied by bands of stone mouldings. The cresting is eccentric. All the quoins, arches, columns, cresting, moulding, and bases are of a light-coloured sandstone from Hollington, Staffordshire, whilst the panels are filled in with deep-coloured red brick. The length of frontage at base is 59 feet, height of arch at side is 12 feet 9¼ inches, and the *width 5 feet 4 inches*. The openings are closed with iron gates, but

these are not shown in the view. The statue (of bronze) seen in

VICTORIA ARCH, PEEL PARK, SALFORD.

the distance represents the late Sir Robert Peel. It is placed near the entrance to the Library.

In 1858 the bronze statue, also by Noble, of the late Joseph Brotherton, was inaugurated in Peel Park.

The *Queen's Park*, containing thirty acres, is situated upon the Rochdale-road. It is the best wooded of the three, the timber having attained greater maturity than in either of the others. The *Philip's Park*, thirty-one acres in extent, is in the Bradford-road. It is the most broken and diversified in its character, and bids fair to be the most picturesque of the three. The *Botanic Gardens*, situated at Old Trafford, occupy a space of sixteen acres, and are the property of a

society formed in 1827 for the purpose of encouraging the study of botany and horticulture. The *Victoria Park* is private property. It contains about 140 acres. The *Zoological Gardens*, Belle Vue, on the Hyde-road, can be reached by the London and North-Western Railway, starting from London-road station. The *Pomona Gardens* are situated at Cornbrook, Hulme, but have no collection of animals.

BROTHERTON STATUE, PEEL PARK, SALFORD.

The *Theatre Royal*, in Peter-street, was opened in 1845. It has a handsome stone front, with a statue of Shakspere placed in a niche beneath the portico. There is sitting room for about 2,000 persons. It is decorated with taste. The *Queen's Theatre*, at the corner of Spring Gardens and York-street, was formerly used as the Theatre Royal. The *Concert Hall*, at the corner of Peter-street and Lower Mosley-street, was opened in 1830. It will seat about 1,200 persons. The *Race-course* is situated in Lower Broughton. The annual Manchester races, so called, take place in Whit-week. A second meeting is held in the autumn.

Environs of Manchester.—The great resorts of the Manchester people are *Alderley*, about fourteen miles from the London-road station of the London and North-Western Railway, and *Bowdon* and *Dunham Park*, eight or nine miles from Manchester on the Altrincham line. Alderley has for its greatest attraction the singular eminence called Alderley Edge, which rises abruptly from the great South Lancashire plain, and commands wide views over the Cheshire and Derbyshire hills, and the valley of the Mersey. The old church of Alderley, about *a mile and a half* distant from the Edge, is one of the most beautiful

in Cheshire. *Bowdon* has become one of the suburbs of Manchester, but should be visited on account of the view from the churchyard. In Dunham Park is the seat of the Earl of Stamford and Warrington. *Rostherne Mere*, two miles and a half beyond Bowdon, *Tatton Park* and *Mere*, and *Knutsford*, a quiet country town five miles from Bowdon, are all worth a visit. Nearer Manchester is "*Hough's End*," a fine Elizabethan structure of brick, two miles beyond Old Trafford. *Worsley Hall* commands fine views over Chat Moss and the valley of the Mersey.

Rivington Pike, near the Horwich station on the Bolton and Preston line, has at its foot the reservoirs of the Liverpool Waterworks. The view from the summit includes Preston and the Fylde country, and extends beyond them to the sea. *Turton Tower*, once a residence of Humphrey Chetham, is situated between Horwich and Bolton.

The country about *Bury* and *Summerseat*, on the East Lancashire Railway, has great natural attractions, and the valley through which the railway runs towards Bury has some beautiful spots scattered through it. About *Clifton* and *Prestwich* the river scenery is especially picturesque. Upon the Lancashire and Yorkshire railways, *Saddleworth* and *Todmorden* are particularly worthy of attention; and upon the Sheffield line, the cleft in the hills beyond *Staleybridge*, called the "Brushes," and the valley of Longdendale, in which the Manchester Waterworks reservoirs are situated, and which extends from Glossop to Woodhead, are rich in moorland and hill scenery. Many other places might be named, but they lie in quarters not so easily accessible; to those who enjoy a few miles' walking, the valley of the Etherow beyond Stockport may be recommended, with its beautiful stream scenery, and the fine gorge and picturesque aqueduct at Marple.

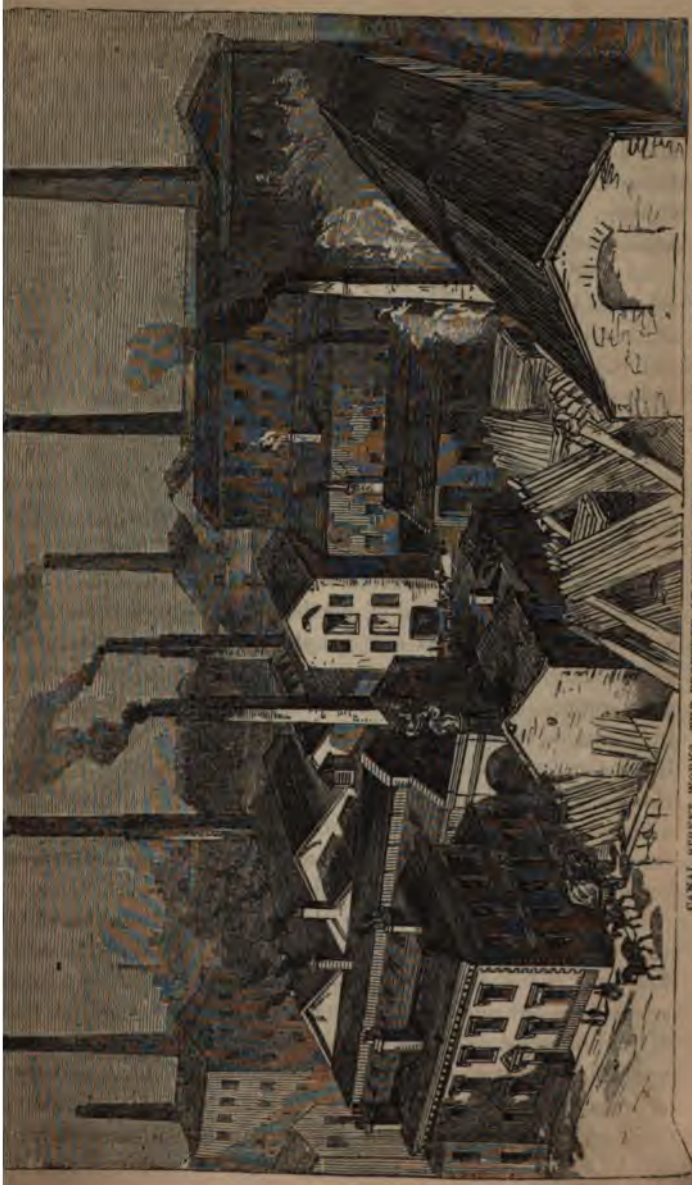
Upon the river Tame, two miles from Stockport, Harden Hall, a fine old castellated mansion, now in ruins, may be found; and, in fact, when the excursionist has once got his foot within the limits of the hilly ground north and east of Manchester, it is scarcely possible to turn in any direction without finding some quaint old gable or quiet nook to repay him.

THE COMMERCIAL ASPECT OF MANCHESTER.

To give even a faint outline of the colossal business carried on in this wonderful city, would be impossible in the limited space to which we are confined; we can only make a few remarks, upon which the visitor may be enabled to form his own judgment, and which may facilitate the inquiries he may make on the manufactures in this emporium of commerce.

Messrs. Wm. Fairbairn and Sons, Engineers.

These extensive engineering works were founded at Manchester in 1817, under the names of Fairbairn and Lillie, and they owed their first prosperity to the improvements in millwork, and especially in the machinery of transmission introduced by the firm. They have led the way in a large part of the engineering improvements of the last half century, and have gradually extended their capabilities for manufacture till they have reached their present vast dimensions. All the

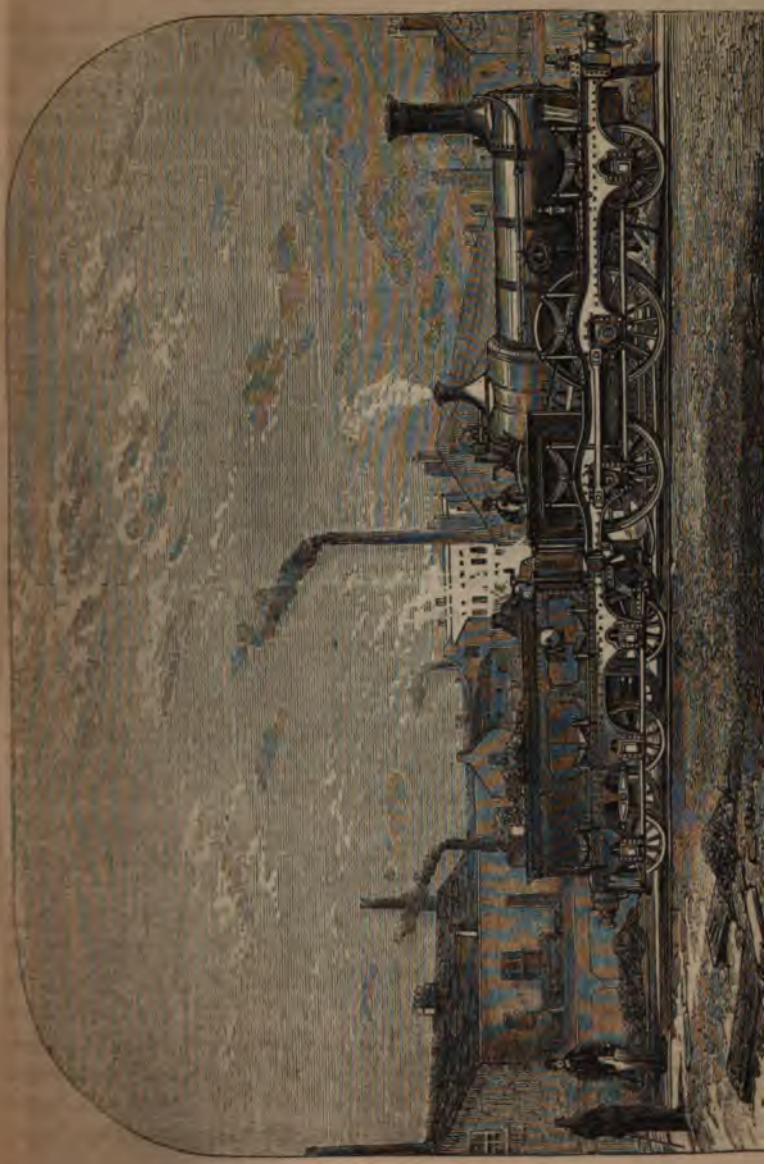


CANAL STREET WORKS, THE PROPERTY OF MESSRS. WILLIAM FAIRBAIRN AND SONS.

departments of heavy engineering are now carried on by the firm, with the exception of iron ship-building (formerly carried on at Millwall, London), which they no longer undertake. In the construction of millwork and the machinery of transmission, water-wheels, stationary and locomotive engines of all classes, girders and bridges, especially those of wrought iron boilers, tubular cranes, and other heavy machinery, Messrs. Fairbairn and Sons have attained a reputation readily acknowledged wherever there is a demand for works of this description.

In millwork this firm took the initiative in the employment of wrought iron for shafting, and in improvements in the construction of water-wheels, composed of the same material. The ponderous wood and cast-iron shafting of the factories of forty years ago has in England been altogether replaced by the slender and noiseless, but vastly more powerful and convenient, shafting of polished wrought iron. These, with their fittings, and the gearing by which they are driven, still form a large department of manufacture in the Canal-street Works. The term shaft, we may explain to our readers, is applied to the machinery of transmission for the conveyance of motion from the prime mover to the various machines. The shafts originally employed in machinery were composed of ponderous masses of wood and cast iron, with enormous bearings and couplings, until the introduction of the textile fabrics by Lambe and others, and the inventions of Wyatt, Arkwright, and Watt led to a new system of machinery. The necessity of increased velocities occasioned a corresponding reduction in the dimensions of shafts, which consequently gave place to comparatively slender wrought-iron rods, carried on pedestals or hangers. Wheels and wooden drums of large diameter were, in like manner, replaced by iron pulleys and straps of moderate diameter and dimensions, which removed much of the friction and noise.

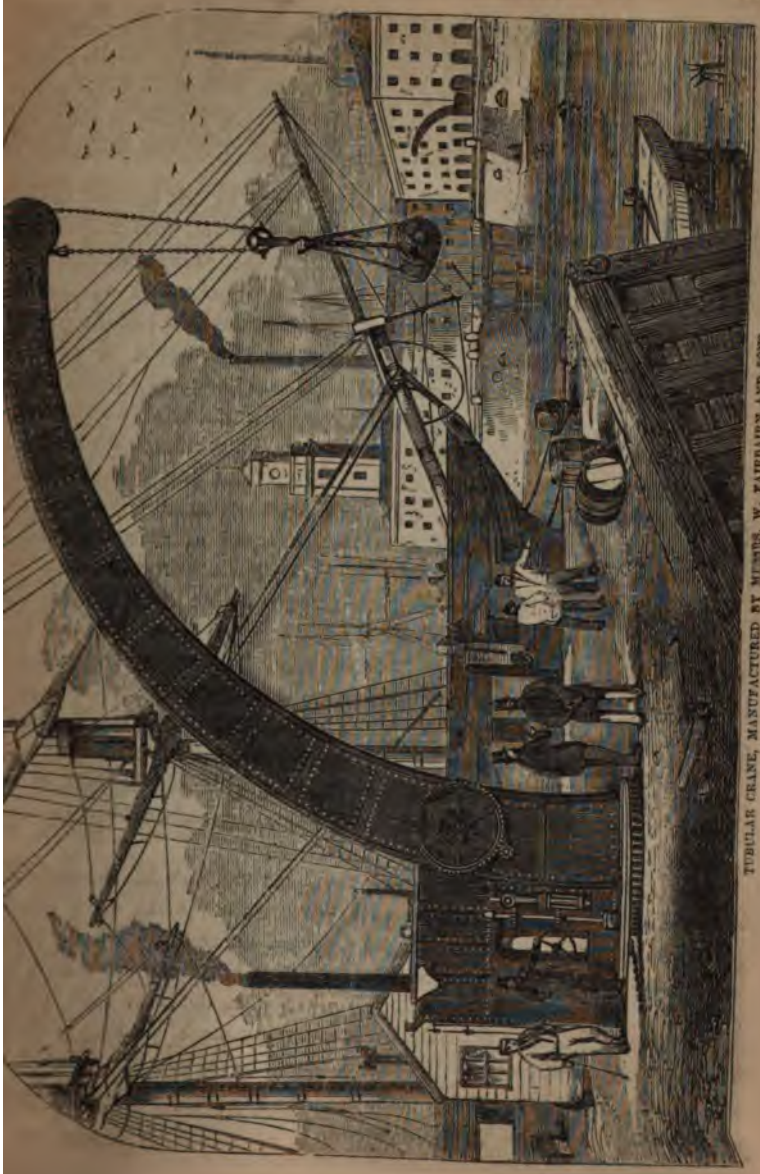
Mr. Fairbairn, in a letter to Mr. George Rennie, dates the introduction of the new system of gearing from the year 1815. "At that time," he says, "the shafts of our cotton mills were moving at 40 and 50 revolutions per minute, whereas at the present day we have none under 60, and as many as 300 and 350. The same number of revolutions are applicable and now in use for flax and silk. The extensive employment of wrought iron for shafts, and the slide lathe, have given wonderful facilities to the production of shafts for increased velocities, with reduced



friction by the transmission of great power through a comparatively small section. In some of the more recent mills of my construction, we have shafts only two and a half inches diameter conveying the power of a 40-horse engine. Another improvement was our system of coupling, and the mode of suspending shafts from the main beams and ceilings of rooms, &c. In the first instance the couplings never get loose, and in the second, the shafts are strung like wires along the ceiling, and with small iron pulleys transmit the motion to the machinery without crowding the room or obstructing the light."

In water-wheels Messrs. Fairbairn and Sons have adopted the late Mr. Hewes's principle of suspension, and introduced the internal peripheral gearing attached to the shrouds; and in the introduction of Mr. Fairbairn's principle of ventilation have carried out the details with unrivalled perfection of design and execution. Some of the most powerful water-wheels in this and other countries have been constructed by them up to sixty feet in diameter, and 150-horse power. Water-wheels and steam are now used for corn-mills, and in the construction of the machinery of these they have attained a high eminence. Iron has here, as in other cases, been their rule. They place the stones in line in iron cases, on firm iron supports, and they are driven by polished iron shafting and gearing, giving to them a degree of lightness, of convenience, and efficiency seldom surpassed. They introduced the silent feeding apparatus and Archimedean screws for carrying the wheat, flour, &c., to and from the stones, and thence distribute it to the different parts of the building where it is required, so that the whole machinery of the mill becomes self-acting.

Water has rapidly given place to steam as a moving power, and Messrs. Fairbairn and Sons manufacture a vast number of steam-engines, both high-pressure and condensing, for driving mills and other purposes, and also locomotives for railways. Their stationary engines are distinguished for the spur fly-wheels of large dimensions first introduced by them, and for a beautiful arrangement of balanced valves, a modification of those employed in Cornwall, for obtaining any requisite degree of expansion. We may instance the four engines of 100 nominal horse power, working up to 1,200-horse power, at the mills of Titus Salt, Esq., near Bradford, and the pumping-engine of 250-horse power, and winding-engine of 200-horse power, at the

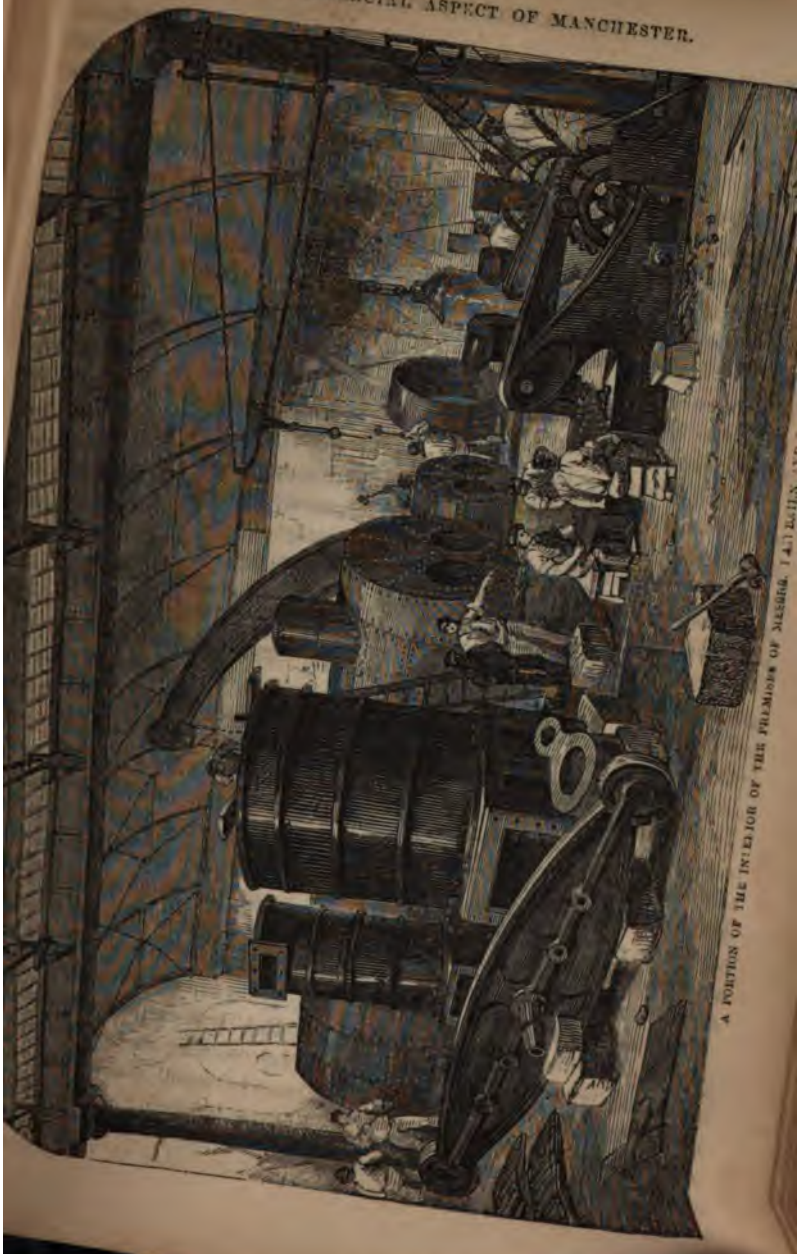


TUBULAR CRANE, MANUFACTURED BY MESSRS. W. FAIRBAIRN AND SONS.

deep mine of 350 fathoms at Dunkinfield. In boilers, Mr. Fairbairn senior, is one of our chief authorities, and their manufacture is carried on, on a large scale, at Canal-street. He has both determined their proper proportions and strength by elaborate experimental inquiries and introduced originally the system of steam riveting, now almost universally employed.

A large number of the experiments which led to the tubular system of bridge building, and the working drawings of the first magnificent bridges of the Conway and Britannia, across the Menai Straits, built on that system, were made at the Canal-street Works, and ever since a very extensive manufacture of wrought-iron bridges and railway girders has been carried on there. These bridges of huge tubes of wrought iron, extending from pier to pier, and composed of wrought-iron plates and angle iron, with cross beams between them for carrying the rails, have proved the great ally of our railway system, affording our engineers one of the safest, most economical, and easily adapted constructions for spans of from 50 to 500 feet or more. The original notion of this system of bridges we may imagine to have occurred to Mr. Stephenson from viewing a tube lying horizontally between two supports; and never before has a brilliant idea been more successfully carried out. After a number of experiments to determine the best shape for the tubes, they were made rectangular; but the greatest difficulties occurred in the execution, for the tubes were not merely of ponderous weight and length, but, in the instance of the Britannia Bridge, required to be elevated to a great height in the air, so that ships might sail beneath. The hollow-girder principle, applied in the Britannia Bridge, is now much used for small railway bridges over roads and streets.

Messrs. Fairbairn and Sons have extended the tubular construction to cranes, and at the Keyham and Portsmouth Docks have erected cranes on this principle, of the most gigantic description. These cranes have a clear sweep over a circle of 60 feet radius, and will take a load of 60 tons from a mean distance of 37 feet from the quay wall, and lift it 60 to 70 feet perpendicularly from low-water mark, landing it 69 feet from the edge of the quay. Other cranes of equal and less size, of the same construction, have been made, and are generally worked by steam-*power, with great* facility and despatch.



A PORTION OF THE INTERIOR OF THE PREMISES OF MESSRS. [illegible]

The works consist of six departments:—1. The suite of offices. 2. The boiler yard, with rivet-making, shearing and punching, and steam-riveting machinery. 3. The foundry and forge, and the steam hammers for wrought iron. 4. The Bridge yard, a large covered ground, fitted, like the boiler yard, with punching and shearing machines. Here the bridges, of whatever size, are erected, and their parts accurately adjusted and marked before sending them out for re-erection. 5. The millwrights' department, a considerable factory in itself, embracing blacksmiths' forges, turning, planing, and fitting shops. Lastly, the engine department, with all the machinery for the manufacture and erection of engines of all descriptions and sizes.

In Mr. Fairbairn, the greatly respected proprietor (in connexion with his sons) of this extensive business, one of the most important in the kingdom, we have an instance of the sterling English qualities which make our commercial men; the fertile invention, and the readiness to adopt and to carry out great plans with energy and singular perseverance. England may well be proud of such sons, for her destinies are more or less controlled by the powerful minds and determined spirit of those who are at the head of our manufacturing firms.

In the "Useful Information for Engineers," by Mr. Fairbairn, we are told the real secret of success in life. This gentleman, who has exemplified in his public career what he advocates with his pen, says:—"To rise in the world three qualifications are necessary: truthfulness, a sound judgment, and persevering industry.

"I am of opinion that no man can permanently advance himself without strict honesty of purpose and adherence to the principles of truth; then in the exercise of our professional, as well as of our domestic duties, a clear perception and a sound judgment are necessary to guide us in the right direction; and, lastly, an unwearied perseverance, superadded to these qualifications, seldom fails to ensure to its possessor certain success.

"Some may think they have no chance, that no opportunity of distinguishing themselves offers itself; but this I do not believe. I can more readily conceive that they have not sought an opportunity, nor availed themselves of it when fortune has thrown it in their way. It is of no use standing and calling upon Jupiter for help, when we should *energetically* and at once put our own shoulder to the wheel. To

improve our condition in life we must seize opportunities as they occur, and to do this we must have prepared ourselves by the faithful and honest discharge of our ordinary duties."

MESSRS. JOSEPH WHITWORTH & Co.—THE WHITWORTH RIFLE Co.—THE WHITWORTH ORDNANCE Co.

These extensive Works cover nearly four acres of ground in the centre of the city, and are devoted principally to the manufacture of ENGINEERING TOOLS of every description. There is a separate branch establishment on the same site for the manufacture of the renowned WHITWORTH RIFLE and ammunition (where they are sold wholesale and retail), and another for the celebrated WHITWORTH CANNON.

About a thousand workpeople are employed, and the business transactions of the firm extend to every portion of the civilized world.

The accompanying engraving represents one of the numerous workshops, and is called the ERECTING SHOP, where the large lathes (some weighing nearly 80 tons), large Planing Machines, and other heavy tools, are assembled and erected. It is after the style of the transept of the Crystal Palace of 1851, and the cranage or lifting-power within is most complete, the whole being effected by steam-power.

The extraordinary powers of the Whitworth Rifle are thus explained in the pages of the "Mechanics' Magazine;" the observations are so just, and are such an honourable testimony to the inventive genius of Mr. Whitworth, that we have repeated them.

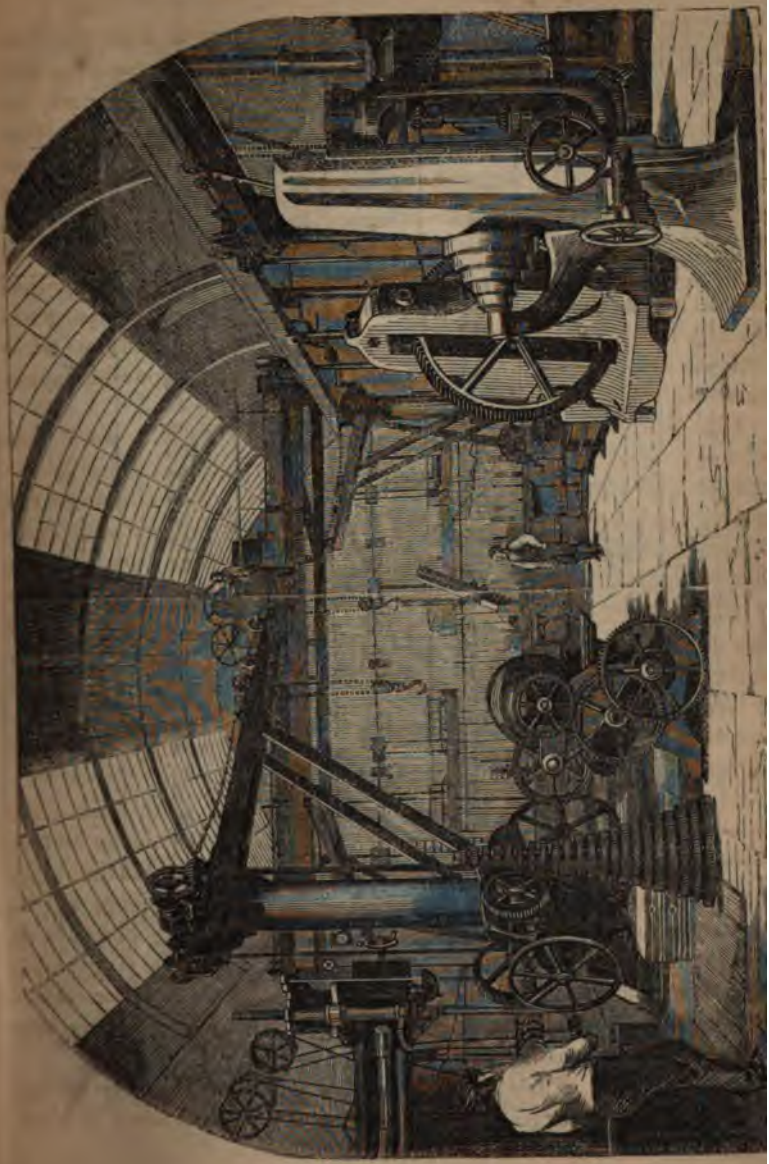
"The Whitworth Rifle has now afforded such ample proofs of its superiority to the Enfield arm, that the single adverse consideration of its cost cannot be allowed to operate much longer against its introduction. The costliness of the Armstrong gun, extreme as it was and is, proved no insuperable obstacle to its adoption; nor can that of the new rifle be allowed to prevail against it. When Colonel Eardley-Wilmot recently reminded Sir William Armstrong (at the Institution of Civil Engineers) that it was unfair to compare the cost of the new rifled cannon with the cost of a brass gun, because after the latter became unserviceable as a gun it was almost as valuable as ever, to sell as old brass, Sir William replied that he trusted his guns would prove 'almost everlasting.' Mr. Whitworth may surely employ the same argument, and with even greater reason. It is fallacious to *compare* the cost of one of his rifles

with that of an ordinary Enfield. Mr. Whitworth uses the best material that can be obtained—material that costs no less than £60 per ton, and which is very hard and tough, and difficult to work, but which is also correspondingly strong and durable. That it is so there can be no doubt. In illustration of its great strength, Mr. Whitworth put into a rifle barrel, one inch in diameter at the breech, with a bore of ·49 inch, a leaden plug eighteen inches long, as tightly as it could be driven home upon the charge. It was fired with an ordinary charge of powder, and the leaden plug being expanded by the explosion, remained in the barrel, the gases generated by the gunpowder all passing out through the touchhole. The same experiment was repeated four times with the same result. It is evident, therefore, that gunpowder cannot burst the Whitworth rifle."

THE WHITWORTH GUN, which has obtained such a world-wide celebrity, is eminently one of the most important inventions of the present age. The extraordinary results of this potent instrument of destruction have been shown in repeated trials, and notably so in 1860, when experiments were made on the Southport beach. On the spot selected (known as Ainsdale Point) it gave a clear and practicable range of 10,000 yards (or nearly six miles) south towards Formby; and of this distance about 7,000 yards had been measured, each 100 being marked by a small stake, with other indications of distance as adopted by the Government in their beach trials of long-range guns. The experiments were in progress, more or less continuously, and with different guns, for between six and seven months.

Mr. Whitworth had five guns at Southport during these trials; but we have now to deal with three only, viz.:—A three-pounder, 6 feet 3 inches long, weighing 1¼ cwt.; a twelve-pounder, 7 feet 9 inches long, weighing 8 cwt.; and an eighty-pounder, 9 feet 10 inches long, weighing four tons. The pitch of the rifling varies, there being one turn in 60 inches for the 3-pounder, and one in 100 inches for the sixty-eight-pounder. Thus Mr. Whitworth adheres to the sharp pitch characteristic of his musket, each gun having rather more than one complete turn in its rifling.

Mr. Whitworth has issued the following tabular summary of the result of each trial of the 3, 12, and 80-pounders, at different degrees *of elevation, which* has been carefully prepared:—



Summary of Experiments with Mr. Whitworth's Rifled Cannon, at Southport, showing the Mean Range and Deviation of all the Shots fired at each experiment.

Date.	Calibre of Gun.	Elevation.	A. No. of Shots Fired.	B. Range.	C. Longitudinal Deviation.	D. Lateral Deviation.
Feb.		Deg.		Yards.	Yards.	Yards.
22	3-pounder	3	10	1579	12	·52
15	,,	10	5	4174	27	1·17
16	,,	10	5	4190	87	5·5
23	,,	10	10	3842	48	3·23
15	,,	20	4	6793	58	4·83
16	,,	20	4	6960	69	8·58
22	,,	20	5	6647	109	7·4
22	,,	20	4	6421	94	4·25
23	,,	20	11	6663	33	3·83
15	,,	35	4	9015	96	10·92
16	,,	35	5	9580	81	19·33
22	12-pounder	2	5	1247	24	·85
16	,,	5	5	2324	11	1·57
22	,,	5	10	2336	16	1·08
23	,,	5	10	2219	22	2·09
21	,,	7	4	3049	17	·5
21	,,	7	4	3098	9	·54
16	,,	10	5	4027	50	3·31
23	,,	10	10	3774	37	3·1
15	80-pounder	5	2	2375	36	2·33
	,,	5	2	2574	30	1·66
23	,,	7	4	3493	8	·58
16	,,	10	2	4700	30	·5
22	,,	10	4	4409	50	5·17

Column A shows the number of shots fired at each experiment, B shows their average range in yards, C shows their average longitudinal and D their average lateral, deviation from a central point, according to the system adopted at Hythe.

We invite all who have time and leisure, to visit, while at Manchester this extraordinary manufactory, one *unique* in its kind, and destined to afford the means of testing practically at some period, remote or near *the superiority of* our country in munitions of war.

THE INDIA-RUBBER WORKS OF MESSRS. CHARLES MACINTOSH & Co. are situated on the south-western side of Manchester, near to the Altrincham Railway Station.

The principal range of buildings is six stories high, and contains nearly 6,000 square yards of flooring. Altogether the premises occupy more than two acres.

Originally established about thirty-five years ago, these works exhibit the first attempt in any country to conduct the manufacture of india-rubber upon an extensive scale.

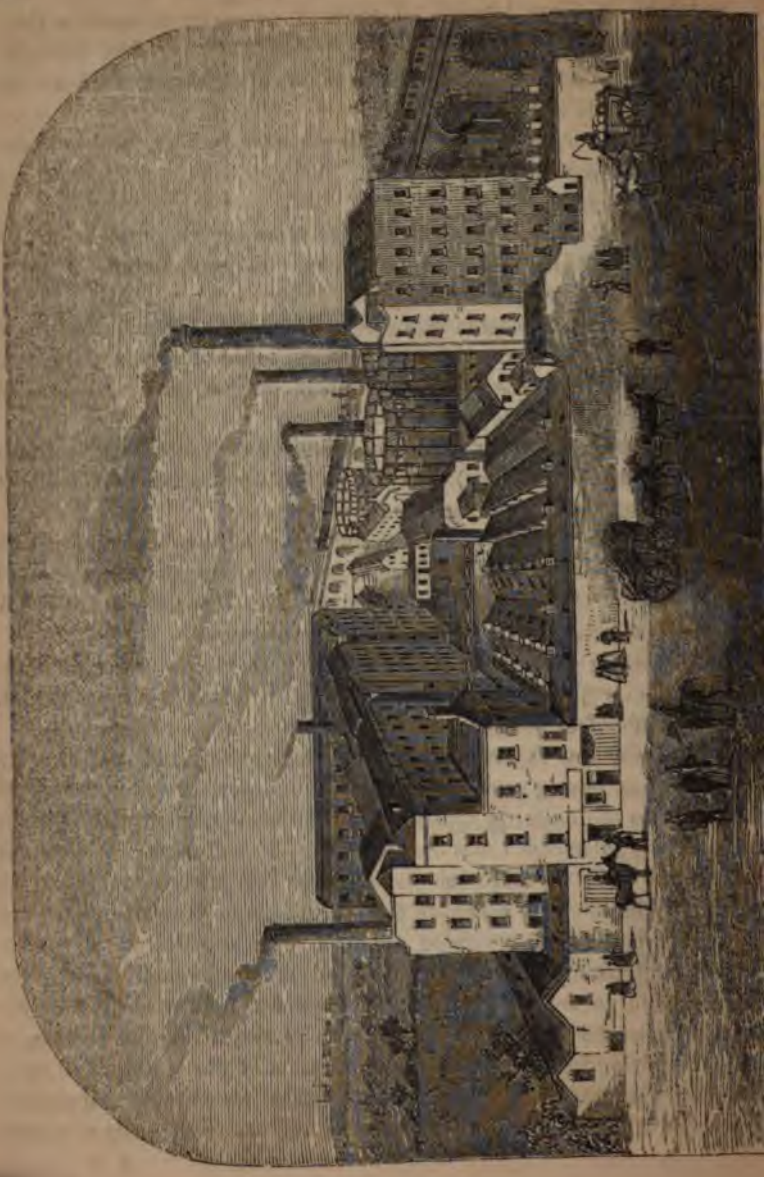
For many years attention was chiefly directed to the manufacture of Waterproof Capes and Coats; and the great value of such a protection against a wet skin, in the old days of stage-coaches, gave this class of business extraordinary development.

More recently, the vulcanization of rubber, as invented by Mr. Hancock (a member of the firm), has led to the application of this most useful substance to an endless variety of purposes.

It would be far beyond the scope and object of this book to describe these applications; it will be sufficient to refer those who are interested in the subject to the work published by Mr. Hancock, entitled "A Personal Narrative of the India-rubber Manufacture."

The following extract, however, referring to the invention of Vulcanization, may be given to show that this discovery was not accidental, but the result of unwearied industry and intelligent perseverance:—

"In making my experiments, I depended entirely and solely on my own exertions, having some confidence in an experience of upwards of twenty years of unceasing application to the manipulation with my own hands of the substance I was dealing with. It had been my constant practice to make my experiments alone, in my private laboratory at Stoke Newington, into which on these occasions no person entered but myself. I consequently lighted my own fires, and did all the labour myself; and having constantly to attend to the general business in London, and to answer innumerable inquiries, both verbally and by letter, besides attending consultations with parties taking out patents, of others requiring information in the application of our materials to their different purposes, I was obliged in a great measure to pursue my experiments after the hours of business, and was frequently employed



lnight in these labours. I think it necessary to mention this
it has been alleged that nothing could have been less difficult
ich a discovery, and that any one acquainted with the substance
ave accomplished it with great ease. After a discovery is once
t is generally said to be easy of attainment; anybody might have
—the thing was so simple."

the general reader, we may briefly state that the raw material of
nufacture, viz. india-rubber, is the milk or juice of peculiar
ound in tropical countries. Of these, the chief is the siphonia,
ng dense forests on the banks of the Amazon, and yielding the
d most abundant supplies.

ge quantity, though of inferior quality, is derived from the ficus
, which grows abundantly in Java, Sumatra, and other islands of
tern Archipelago.

otal quantity imported into the United Kingdom varies con-
y, according to circumstances. It has exceeded 5,000,000 lbs.
ear.

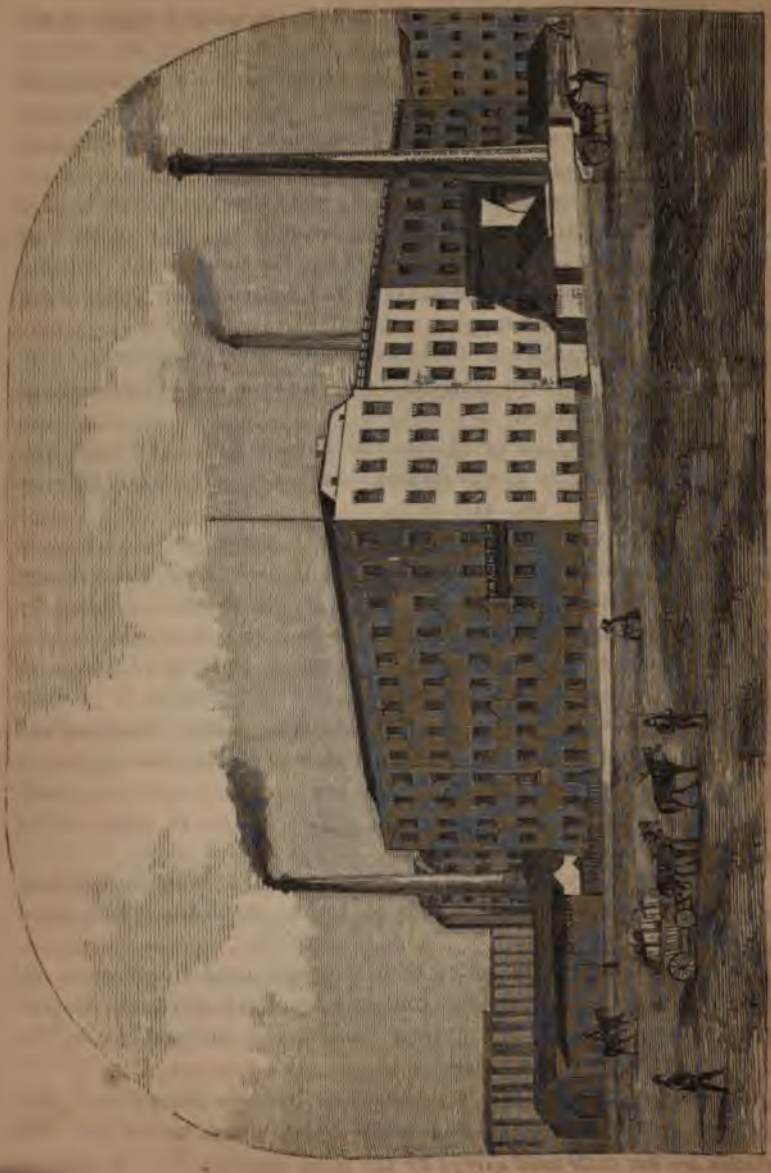
rubber, when thoroughly cleansed, undergoes a variety of
g and rolling processes, to adapt it to further manufacture,
thus brought to a plastic state (or reduced to a solution by
issolved in rectified turpentine or naphtha), it is blended with
to effect the operation of vulcanizing. Silicate of magnesia,
, and other substances are frequently incorporated, to produce
cial result required by the manufacturer. These operations and
gredients recal to our memory a passage in Milton—

> "The work of Sulphur . . . . fed
> With Naphtha and Asphaltus."

ization is truly the work of sulphur. The India-rubber duly
with sulphur, and submitted to the requisite temperature,
a new condition.

usceptibility to the action of heat or cold, and to grease or oil,
derfully diminished; and consequently it is now readily adapted
infinite range of applications—mechanical, surgical, &c.—from
t was formerly excluded.

ed, the manufacture is now carried from the densest and most
l masses, sustaining a *pressure* of several tons, to the most



delicate surgical instruments; and from the finest and most elastic threads to the hardness of ivory or horn.

The works of Messrs. Charles Macintosh and Co. comprehend nearly every useful application of India-rubber, and also the supply of it in all stages of preparation to the various trades which so largely consume the substance; and though the manufacturing processes are not shown to strangers, information and assistance are readily imparted to all who desire to apply India-rubber, or make themselves acquainted with its properties and uses.

The following extract, from the Jurors' Report on the Great Exhibition of 1851, shows the value attached to the discovery of the vulcanization of India-rubber:—

"COUNCIL MEDAL.—Charles Macintosh and Co., 73, Aldermanbury (now 3, Cannon-street West). The firm of Charles Macintosh and Co. comprises the names of the men who in Europe have made the most useful discoveries in the art of applying Caoutchouc to the most varied uses: the late Mr. Macintosh, who gave his own name to the waterproof garments, and Mr. Thomas Hancock, whose share of merit in the discovery of the vulcanization of India-rubber we have already mentioned. In going through the collection of articles exhibited by this firm, the importance of the uses to which the substance is capable of being applied, especially since the discovery of the process of vulcanization, can be readily appreciated.

"The kinds of fabrics with which the garments called 'Macintoshes' are manufactured have always remained the same, but the garments themselves have acquired more lightness and less smell; and the substitution of vulcanized for common caoutchouc insures to them at the present day a permanent suppleness.

"The other services which these fabrics are called upon to perform have been greatly multiplied. Their price having become less, they are capable of being applied in lieu of tarpaulin for covering wagons, carriages, &c. The property which they possess of serving to contain water, and which had at first been made available for a well-known therapeutic use, has allowed of their being made into portable baths, which can be rolled up like an ordinary cloth when not in use. The shoes exhibited by Messrs. Macintosh and Co. are made with much care, and with a degree of elegance which shows that in Europe these articles *are but little used except by* the more opulent classes.

"It is not only in the making of shoes that India-rubber has been called in to supersede leather; the articles exhibited by Messrs. Macintosh and Co. show the use that can be made of it to form pistons of pumps, and how *conical* valves of India-rubber can be advantageously substituted for leather or metal ones. Sheets of caoutchouc of different colours, either smoothed or worked in relief, are brought in to supersede moulded ornaments in the manufacture of furniture, of ottomans, and in the binding of books.

"The use of vulcanized India-rubber to form the piston valves in steam-engines, on the screw principle, has greatly contributed to the employment of these novel motive powers, which are destined in some degree to effect a change in navigation, by allowing steam to come in solely as an auxiliary to the wind. The exhibition of Messrs. Macintosh and Co. comprises a valve of this description, which after six months' use has undergone so little alteration, that it may be foreseen that these articles possess an almost unlimited durability. The rendering available the impermeability of their fabrics to gas and air has likewise been extended. To the air-cushions, which have long been used, are now added the air-mattresses, so well adapted as beds for travellers and invalids; boats inflated with air, at once portable and incapable of sinking, and which for life-boat uses and inland voyages are capable of rendering great service. The collection of Messrs. Macintosh presents some specimens of this kind of great interest. Lieutenant Halkett, of the Royal Navy, by making them in several closed compartments, in such a manner that the stuff being pierced through at one point cannot lead as a necessary consequence to the sinking of the boat, has rendered more certain the services which these machines are called upon to perform.

"The applications of the elasticity of Caoutchouc have also been greatly increased. The wheels of carriages have been surrounded by it in such a manner as to prevent the disagreeable noise which they make upon the pavement. Rollers for inking printing types and lithographic stones have been made from it; it is employed for the making of cushions for billiard tables, and to supersede the use of sacking cords in bedsteads. Advantage has been taken of the elasticity of an India-rubber band, which has a tendency to return to its primitive *length*, when the action of opening a door has elongated it, for the

purpose of forming door-springs, the use of which is beginning to spread widely.

"The substitution of vulcanized India-rubber for metallic springs in the buffers of locomotive engines, is one of great service. The masses of vulcanized India-rubber deaden the shock with an ease which may cause this employment of Caoutchouc to be considered as one of the most useful to which it has been applied up to the present day. A certain number of the novel applications are due to Messrs. Charles Macintosh and Co. The ability which they have displayed in the manufacture of Caoutchouc has afforded to other inventors of these new applications the means of putting their ideas into practice. Without the discovery of vulcanized India-rubber they could, moreover, never have been carried out. The Jury, therefore, in order to recompense the considerable services rendered in the employment of Caoutchouc by Messrs. Macintosh, Hancock, and their other partners, have awarded a council medal to the firm of Charles Macintosh and Co."

Vulcanized India-rubber, as applied to mechanical purposes, numbers at this time not less than one hundred distinct kinds of articles, and it is curious to observe that even the elastic kinds can be turned in a lathe to a true and smooth surface.

For surgical purposes the applications are very numerous, showing the great utility of this material in alleviating human suffering.

Chemical applications comprise numerous articles for apparatus employed in works, and for protection of the person from the action of acids and alkalies.

Under the classes nautical and agricultural we find applications for protection of ships, saving of life, letters, and property in cases of wreck, and for holding and conveying water for use on board, and for extinguishing fires. Protecting sheets are made for hay and corn stacks, goods in transit, and articles for the preservation of horses and cattle, and for improvements in the operations of malting.

Modern electrical developments are largely indebted to India-rubber, and we find that substance used in various ways for coating the telegraph wires, and for the purposes of general insulation.

We must not entirely overlook the principal applications of Vulcanized India-rubber to the modern system of warfare.

The Armstrong cannon is indebted to this substance for the means of checking the recoil, and of ascertaining its force. Mortar beds in like manner rest upon vertical rubber springs, to diminish the concussion and the strain upon the vessel. Military pontoons, or portable bridges, are formed of cylindrical inflated tubes, which, when deprived of air, are compressed into small space, and can easily be carried over mountain passes on the backs of mules.

The material being produced in every variety of condition, from the softness and porosity of sponge to the solidity and hardness of metal, enables it to be applied to a great number of miscellaneous uses, as articles for travelling and domestic use, fancy purposes, ornamental and decorative articles; while the developments of the moulding patents obtained by Messrs. Macintosh and Co. enable this extraordinary substance to be employed for artificial teeth, gums, &c. &c., effecting a complete and beneficial change in dental surgery.

This glance at a few of the interesting productions of these works conveys but an imperfect idea of their magnitude compared with the facts. For instance, Messrs. Macintosh and Co.'s invention of Vulcanized India-rubber *Thread* has opened up an entirely new branch of industry. Their monthly production is more than sufficient to encircle the globe; and several mills have been erected in the neighbourhood of Leicester for the sole purpose of weaving the thread into the immense number of elastic fabrics now before the public.

The great and deserved reputation of

THE FINE ARTS REPOSITORY OF MESSRS. THOS. AGNEW AND SONS,

the publishers of so many works of art, which have successfully passed the ordeal of critical taste in this and other countries of Europe, will attract to their establishment all who are admirers of the fine arts.

This important establishment was one of the earliest in this country devoted to the sale of works of art; and the firm has been extensively engaged in the publication of portraits of the eminent men of the Northern Counties during the last forty years.

The reader will appreciate the enterprise and public spirit of these *gentlemen*, when he is informed that, during the Crimean war, they

undertook, at enormous outlay and risk, to send a photographer to the scene of the conflict. The artist thus commissioned was the well-known and talented Mr. Roger Fenton, to whom was confided by Messrs. Agnew and Sons the execution of their plan, which resulted in the most complete pictorial illustration of a campaign that could have been obtained, including the portraits of hundreds of heroes, which in themselves form one of the most remarkable galleries of illustrious men that we possess. The wonderful merit, accuracy, and beauty of these productions have established for Mr. Roger Fenton a name among photographers that will never be forgotten ; while, at the same time, the circumstances which contributed to his success reflect the highest encomiums on the liberality, the sound judgment and critical taste of the respected projectors of the work. They have raised a monument to their own efforts, in an undertaking that will be imperishable in the historic annals of our country.

This instance of enthusiasm for the fine arts is not, however, single, for Messrs. Agnew and Sons have sent their artists all over Europe, and some of the most valuable acquisitions of the pencil have been the result. We may add, that the largest commissions given to any English artists have been those awarded by Messrs. Agnew and Sons, who have, by this liberal appreciation of native talent, secured the good services and the willing co-operation of many distinguished professors. For three years that eminent landscape-painter, Mr. Pyne, whose name is associated with many of the finest productions of the pencil, was engaged by this firm in the production of a series of representations of Italian scenery, and for a shorter period, in the completion of the now well-known series of Views of the lakes of Cumberland and Westmoreland. Mr. Barrett, whose reputation ranks high amongst our fine-art illustrators, was sent by Messrs. Agnew and Sons to Scutari to paint Miss Nightingale's portrait in a group, of which this lady deservedly occupies the most prominent position, receiving the wounded soldiers as they are landed from the transports. The celebrated picture of "The Allied Generals before Sebastopol" was a commission also given to Mr. Barker by this firm ; and the fidelity with which this was executed has been judged and appreciated, not only in our own country, but throughout Europe. The magnitude of these *undertakings* will be partly estimated from

THE FINE ARTS REPOSITORY OF MESSRS. THOMAS AGNEW AND SONS, MANCHESTER.

the fact that this last work cost, as we are informed, in its production, upwards of £7,000. The picture, by the same artist, of "General Williams and his Staff leaving Kars," from actual portraits and sketches taken on the spot, was another undertaking by Messrs. Agnew and Sons, and attended with a cost and consequent risk which nothing but the most zealous and liberal promoters of such works could contemplate without uneasiness. But the most important of these great speculations, and one entailing the largest amount of perseverance, talent, and energy, not to speak of its pecuniary results, was the large picture representing "The Meeting of Sir Henry Havelock and Sir Colin Campbell (now Lord Clyde) at Lucknow," for which purpose the artist was sent direct from England to Lucknow, in order that the smallest incidents might have the incalculable benefit of strict fidelity.

Messrs. Agnew and Sons had the honour of receiving Her Majesty's command to submit this magnificent work, in May 1860, to the Queen and the Royal Family at Buckingham Palace, and for ten months the picture was exhibited continuously in London, with extraordinary success.

The affecting circumstances connected with this never-to-be-forgotten event, render this picture one of the most deeply interesting subjects that have ever been produced; and associated as it is with remarkable talent, and noble and generous devotion to the cause of art, it reflects the most honourable testimony to those engaged in its production. Works like these could only be undertaken by a combination of the most disinterested and enthusiastic love of art, and a disregard of the pecuniary vicissitudes that undertakings of this magnitude must necessarily involve. The fine arts are greatly indebted to the firm that could enter upon such a wide field of speculation for the purpose of illustrating events dear to every Englishman, and to every lover of native talent.

As a proof of the high estimation in which Messrs. Agnew and Sons are held by the most distinguished personages in the realm, we may mention that this firm was largely engaged during the Art Treasures Exhibition, in the collecting of works from all parts of the United Kingdom, a delicate and confidential commission, which their connexion with artists, collectors, and possessors of rare works, enabled them to undertake with remarkable success. The responsibility of

obtaining and taking charge of the priceless treasures which were forwarded to these gentlemen, shows the sterling integrity of their characters, and the confidence reposed in their care and zeal. The superb photographic publication of *two hundred* of the principal pictures in the Art Treasures Exhibition, with which work Messrs. Agnew and Sons were connected, will be remembered by all who took an interest in that great and unrivalled exhibition.

At the great picture-sales in London, Messrs. Agnew and Sons are, in most cases, reported as large buyers, as well as in the Water-Colour Society's Exhibitions in London, the Royal Academy, and the various exhibitions throughout the country.

These gentlemen have recently opened a branch establishment in Liverpool, in the magnificent pile recently erected near the Exchange in that city, by one of the wealthy Insurance offices.

The first manufactories and the various *atéliers* of the Continent, of Sèvres, Paris, Berlin, Dresden, Vienna, Milan, are constantly searched by this enterprising firm for works of art, with which these spacious show-rooms are stored; and strangers to Manchester should not fail to visit Messrs. Agnew and Sons, if they wish to carry away any idea of the wealth that must exist in Lancashire to support an establishment so extensive as this.

We believe it frequently occurs, that property to the amount of £150,000 is at one time in Messrs. Agnew's establishment. They employ specially in the manufacture of frames, &c., a large number of workmen, who, in most cases, have been apprenticed to the house.

The name of this firm will be remembered in connexion with the Queen's first visit to Manchester; when Mr. Agnew, as Mayor of Salford, originated that extraordinary spectacle of 80,000 Sunday scholars being assembled in one mass to do honour to their Sovereign. Mr Thomas Agnew has been a zealous supporter of the Museum in Peel Park, in the neighbouring borough of Salford, having by his own munificence and example added a great number of valuable pictures and works of art to that flourishing institution.

Mr. Henry Ogden, Cabinetmaker and Upholsterer.

This much-esteemed house of business is in Lower King-street *and is well known* in the most distant parts of the neighbourhood fo

the excellence and variety of the cabinet goods manufactured here. It is especially noteworthy, that every article on the premises is made from the best seasoned materials, and by skilful handicraft workmen: Mr. Ogden can thus guarantee the substantial and durable qualities of his goods. The visitor will be struck with the extensive character of this business. The ground-floor Show-Room is an apartment 168 feet long, and, even thus spacious, is surfeited with goods. The historian who might wish to describe the familiar habits and usages of the present times, could not gather better ideas on the subject than by spending a few hours in this repository, not only of the *fine*, but most certainly the *useful*, arts. Here will be seen every description of furniture, from those which minister to our homeliest comforts to others that please the eye by their beauty and good taste. These are found grouped together in profusion, and creating, as it were, the idea that a considerable town has just been built, and requires the fibrous productions before us to complete the dwellings. Another impression that will probably strike the mind is, that this great wealthy city, the "Cottonopolis" of the world, must indeed be rapacious in its wants, to require the vast stores of goods kept in the trading Megatheriums of Manchester; but so it is, as every one well knows who visits the dwellings of the inhabitants. No luxury is spared by the well-to-do classes, and the homeliest house is furnished with comforts that could not be found in a baronial mansion a few centuries ago. The solid, substantial character of the citizens is also exemplified in the articles of domestic use that are mostly in request; the broad massive tables, evidently manufactured to support an amount of conviviality that their future owners will be as well able to afford as they are ready hospitably to give; the luxurious chairs in which we can imagine the wealthy merchant to recline after he has quitted the toils of business, and perhaps corresponded with one-half of the globe: then there are the thousand tasteful and beautiful objects of furniture that garnish his mansion, and of which Englishmen are so prodigally and yet so wisely fond, for we have heard foreigners declare with admiring rapture, that a gentleman's house in this country was better furnished than many a ducal mansion with its thousands of acres abroad. These and many other thoughts will pass through the mind of the spectator as he stands in these *capacious Show-Rooms*.

THE PREMISES OF MR. H. OGDEN, UPHOLDER, MANCHESTER.

The works adjoining the retail department are 82 feet in length, making a total frontage of 250 feet. The business was established seventeen years since, and has been gradually extended to meet the requirements of the public, until a colossal repository has been formed —the largest even in this city of trade palaces. The immense stock is requisite to compete with the growing tastes and increasing luxuries of the present day. In the cabinet manufactory adjoining, where every article is made, from the homeliest cottage appendage to the most elegant object of a lady's boudoir, a large number of workpeople are employed,—hardy, manual labour being exercised in conjunction with skilful minuteness, comfort, and elegance united. We have ourselves, at a less experienced age, been the victims of *cheap* furniture, fragile and brittle as our own judgment was at that time; but the truth should never be lost upon the housekeeper, that economy is only safely practised by purchasing really sound and substantial articles. By this means we may avoid the mortification of having our houses filled with broken chairs, rickety tables, and a thousand grievances which sour the temper and materially *affect the purse* after all. The best security against such mishaps is to purchase from those we can rely upon. We would strongly recommend the tourist, in making his journey to Manchester, to visit this most interesting establishment.

The Carriage Manufactory of Mr. J. Cockshoot, Junior.

The Carriage Manufactory of Mr. J. Cockshoot, Junior, is situated in Great Ducie-street, close to the Victoria Station, and New Assize Courts. There is also an entrance from New Bridge-street.

On entering these premises the first object of importance that arrests the attention of the spectator is the spacious and well-stocked Show Rooms, containing carriages in *every* variety of shape and manufacture, as Landaus, Clarences, Barouches, Broughams, Queens, Sociables, Wagonettes, Stanhopes, Phaetons, &c.; all strong and tasteful vehicles, made with the greatest care, and with a finish and perfection equal to anything that could be produced in the kingdom.

The art of carriage-building has been singularly developed of late years in England, and our vehicles are now superior to those manufactured abroad. The continental carriages cannot, for a moment, compete

THE CARRIAGE MANUFACTORY OF MR. J. COCKSHOOT, JUNIOR.

in strength with those made in our country; and even in matters of taste, in which we were, not many years since, so deficient in regard to carriage-building, the improvements have been so great that we can now rival and even surpass our competitors.

Those of our readers who have the privilege of visiting this extensive manufactory, will have an opportunity of remarking the various processes to which a carriage is subjected from its *birth* (if we may be permitted to use the simile) to its maturity, when it emerges from the show-room, and becomes a useful as well as an ornamental addition to our comfort. From the large show-rooms we pass to the TRIMMING DEPARTMENT, which adjoins the COACH OR BODY, AND CARRIAGE MAKERS' SHOP. From this department we ascend to the spacious PAINT ROOM, in which a large number of skilful operatives are always employed. Here we saw, at the period of our visit, the state-carriage of the High Sheriff of the county, which was manufactured by Mr. Cockshoot. To this department, several smaller rooms are added, devoted to finishing and decorating the carriages. From this portion of the premises, we descend to the ENGINE ROOM, and the SMITHS' SHOP. The large court-yard or quadrangle, partly visible in our engraving, is surrounded by Warehouses, &c. The timber sheds are numerous, and contain the most expensive and best seasoned woods. The premises occupy about 2,000 square yards, and are admirably arranged for carriage building purposes.

The business, now under the superintendence of Mr. J. Cockshoot, Junior, has much increased of late, and is one of the best conducted establishments in the kingdom. The manufacture of carriages has been carried on here upwards of a century. The manufactory is well ventilated throughout, and is heated by steam.

One of the *first* requirements of the visitor will be an hotel, and here we can, with the utmost confidence, and from our own experience, recommend that most comfortable hostelry, the QUEEN'S HOTEL. In a city like Manchester, visited by persons from all parts of the world, in great numbers, bent on pleasure or business, it is requisite that the hotels should be found to meet every requirement that comfort and convenience can suggest. In these particulars the QUEEN'S HOTEL (an engraving of which is annexed) stands pre-eminent, and we have

great pleasure in adding our testimony to those which have been given by tourists and the public press generally. The building is extensive, the apartments are large, and well furnished; the refreshments are of the very best description, the attendance excellent, the management of the worthy host, Mr. JOHNSON, in every way perfect; in short, the

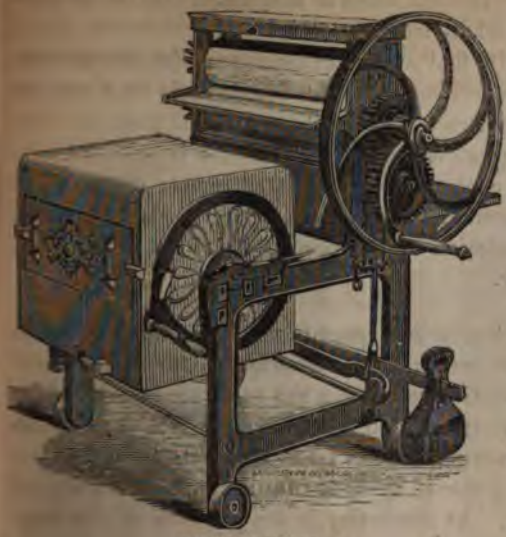
THE QUEEN'S HOTEL, MANCHESTER.

traveller will find himself completely at home in these most comfortable and desirable quarters. Two large coffee-rooms and good billiard-rooms are attached to the building.

In noticing the commercial character of Manchester, we may allude to the MANCHESTER DAILY EXAMINER AND TIMES, a remarkably able newspaper, equal in size to the London papers, and containing a vast amount of useful and interesting intelligence. This journal publishes the latest intelligence received by telegraph up to the hour of going to press.

The inventor and patentee of an excellent Washing Machine (Mr. Thomas Bradford, of Cathedral-steps, Manchester) has made his name *famous, as one of* the foremost contributors of domestic machinery.

If we may judge of the efficiency of those for private use with that of a large one for steam-power we had an opportunity of seeing tested at Mr. Bradford's works, preparatory to its being sent away to a Government establishment, we should say that no establishment, whether great or small, ought to be without one, for its efficiency and despatch, coupled with its really wonderful economy of the "material" of the laundry.



WASHING-MACHINE.

In our preceding notice of the furniture repository of Mr. Ogden, we have adverted to the advantages of possessing good and tested articles of home use; another department of business, equally useful and essential in its character, claims our notice; this is the PAPER-HANGING ESTABLISHMENT OF MESSRS. WILSON, LITTLE, AND HENSHAW, situated in John Dalton-street. To render the adornments of a house complete, it is necessary that the walls should be attractive and tasteful, and thus show the contents of an apartment to their best advantage.

In the immense variety of paper-hangings to be seen at this depôt, the visitor will have an opportunity of selecting from the choicest productions of the home and foreign manufactories, in every variety of taste and excellence. It is surprising to find what a wide field of invention and ingenious fancy is opened in this branch of the arts: patterns of the most seductive kind are shown in exhaustless profusion, and the spectator is fairly puzzled in making a selection.

The tourist will derive much pleasure from a visit to the establishment of Messrs. Wilson, Little, and Henshaw.

Those who wish to stock their wine-cellars *prudently*, can do so by purchasing the choice and excellent wines of MESSRS. WILLIAM M'CONNELL AND CO., No. 26, Market-street.

Our musical friends will find at the PIANOFORTE ESTABLISHMENT OF MR. HIME all their requirements. The instruments kept on sale are of the very first-class character, having been selected from the best manufacturers with the greatest care. New Music is received constantly, affording a varied choice. The shop is extremely elegant, and presents an attraction, in connexion with the superior goods it contains, and the well-merited reputation of the proprietor, which will not be lost sight of by the visitor.

From Manchester the tourist can speedily reach LIVERPOOL, which our limited space will not permit us to describe. Our readers will however, find ample information respecting the celebrated town in our GUIDES to the NORTH-WESTERN, and to the GREAT WESTERN RAILWAYS. We will now retrace our steps as far as East Retford, and pursue our journey north-east from thence by the MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY. At Barnetley is the junction of the Manchester, Sheffield, and Lincoln Line. At Habrough is the junction of the line from GRIMSBY TO HULL, passing by Ulceby Junction, Thornton Abbey, Goxhill, and New Holland. From Habrough Junction Station to Great Grimsby is but a short distance. This is the terminus of the East Lincolnshire Railway, which has been already described in our pages.

We must now request our readers to accompany us, once more upon the

GREAT NORTHERN MAIN LINE

at Retford, on our journey to York.

Two miles east of Retford is *Grove Hall*, the ancient seat of the Hercys, formerly lords of the manor, and situated on a considerable elevation in the midst of a well-wooded park.

On the left of the line, about six miles south-west, stands *Clumber*, the seat of the Duke of Newcastle. The mansion consists of three fronts. The one facing the lake has a beautiful Ionic colonnade in the centre, and a stone terraced garden, with urns and balustrades, and *steps* leading to the water. The interior abounds with objects of great *rarity and beauty*, including a valuable collection of paintings. The

park is of great extent. Adjoining to Clumber is *Thoresby Park*, the residence of Earl Manvers, the grounds of which include the remains of Old Sherwood. A good collection of paintings may also be seen at this mansion.

CLUMBER, THE SEAT OF HIS GRACE THE DUKE OF NEWCASTLE.

Proceeding forward, on the left are the parishes of *Ordsall* and *Elkesley*, *Babworth Hall*, *Ranby Hall*, *Ranby House*, and *Osberton*.

Three miles from *East Retford* we arrive at SUTTON STATION. This parish, with the township of *Lound*, contains two day and two Sunday-schools. The tower of the small yet venerable church forms a conspicuous object, backed by the swelling hills toward *Mattersey*. Two miles and a half farther is RANSKILL STATION. The hamlet is seated about half a mile from the railway station in *Blyth* parish. On the right of the line, before reaching the next station, is Mattersey, a parish on the south bank of the river Idle. The church is a Gothic structure, and contains some curious carvings, discovered many years since under the old pavement of the chancel floor. One of these seems to represent the benevolent action of St. Martin dividing his cloak. In the neighbourhood was formerly an abbey for Gilbertine monks, of which some remains may yet be seen.

The seats about here are *Mattersey Abbey*, *Serlby*, and *Blyth Hall*. The town of Blyth was noted, in former times, for its religious and charitable establishments.

At a distance of nearly two miles from Ranskill, the train reaches SCROOBY STATION, in the *vicinity of* which, at a farm-house, are the

remains of the palace of the Archbishops of York. A mulberry tree, planted by the haughty Wolsey, is shown here. Population of the parish, 271. After passing Everton parish, and Scaftworth, a manor in which many Roman remains have been discovered, we arrive at BAWTRY STATION. The town is seated on the river Idle, and near the Roman road leading from Littleborough to Doncaster. The chapel was erected in the reign of Henry II., and rebuilt in 1686; the tower, which is crowned with pinnacles, and supported by buttresses, was added in 1712. *Bawtry Hall* is on the right.

On the right of the line, about a mile from Bawtry, is *Austerfield*. Here a small stream that runs through the yard of the Crown Inn divides the counties of Notts and York. Near Austerfield is *Finningley*, the lordship of which was formerly the property of the Frobisher family, of which was the famous Martin Frobisher, the enterprising navigator in Queen Elizabeth's time. *Finningley Hall* is pleasingly situated on a rising ground. A little farther are *Newington*, *Misson*, *Misterton*, and *Axey*, and, more distant, *Epworth*, where a castle stood, the feudal residence of the ancient and noble family of Norfolk.

Four miles beyond Bawtry, on the left, is *Tickhill*, with the remains of a castle erected in the time of the Conqueror. These consist of a mound, on which the foundations of a keep are visible, the ditch, with part of the external walls, and a dilapidated Norman gateway. The northern part, by considerable repairs and additions, has been changed into a modern residence, and the grounds within the walls are formed into gardens and shrubberies. The ruins of an ancient Augustine priory, founded in the reign of Henry III., and situated in an adjacent vale, have been converted into a farm-house. In the fine old church there are some beautiful monuments. In this vicinity is *Sandbeck*, the seat of the Earl of Scarborough.

Four miles and a half from Bawtry, we reach ROSSINGTON STATION. This parish is in the union of Doncaster. In the church are several good monuments; and near the entrance to the choir, under a stone, lie the remains of James Boswell, the King of the Gipsies, who died in 1708. Annual visits were formerly made to his grave by gipsies.

Passing Rossington Station, in the vicinity of which are *Cantley Hall, and Hatfield Chase*, a barren level, on which Cadwallo, the

English king, and his ally Penda, defeated Edwin of Northumbria, in 633, and where Edward III. was born, we arrive at

Doncaster Station. This place, the *Danum* of Antoninus, a Roman station on the river Don, was by the Saxons called *Donna ceaster*, from which its present name is derived. It is believed that a castle formerly occupied the site of a portion of the parish church. During some of the most stirring parts of England's history, Doncaster was often distinguished, and several royal personages have at various periods visited it. It was here, in 1536, that Aske, the leader of the Pilgrimage of Grace (a rising of 40,000 persons in favour of the old religion), met the herald of Henry VIII., who took him to Court. Aske was afterwards hung at York. The town is the first of any importance on the approach from the adjoining counties of Nottingham and Lincoln, and is not more than eight or ten miles from each of them. It is one of the cleanest and best built towns in the kingdom. The High-street, nearly a mile in length, is remarkably handsome. The principal building is the parish church. The former church, which bore the same name, having been destroyed by fire, the new one retains the general form and features of its predecessor, but differs in size and some of its proportions. The details also are wholly different, since the style of architecture adopted in the new fabric is of an earlier character than the old one, the former being "decorated," while the other was for the most part "perpendicular." In taking down the ruins, some fragments were disclosed which indicated portions of a very early building, in no way incorporated with the later one, so that originally it may probably date back among the earliest churches in the kingdom. The new church is cruciform in plan; the nave consists of five bays, with a north and south aisle to correspond. There is also a south porch, groined in stone. The transepts are lofty, and the ridges are level with that of the nave. The windows in all the gables of the church are large and important features in the design; the chancel east window in particular, which is of eight lights, has been most carefully studied, and may be pronounced in every way perfectly successful. The south aisle of the chancel is known as the "Forman Chapel." This portion is, in some degree, independent of the rest, the details being more ornate, in the buttresses especially, and the windows having tracery of a peculiar character. Internally, too, this chapel is vaulted

in stone, richly groined, and the stained glass windows, by Wailes, complete a most interesting portion of the work. The whole of this chapel has been erected at the expense of W. H. Forman, Esq., of Pippbrook House, Dorking. The stone of the exterior is mostly from the Steetley quarries. The first contract was for masonry only, and that of Messrs. Ireson, of Northampton, was accepted at something more than £20,000. With subsequent additions, this amount has been greatly increased. The roofs, and the woodwork generally, are of oak; and the whole of this department has been executed in the most praiseworthy manner by Mr. Ruddle, of Peterborough. The roofs are all covered

THE GRAND STAND, DONCASTER.

with lead. The font forms a conspicuous and noble object in the nave. The carving of the organ throughout is of the most exquisite kind, and has been executed by Mr. J. B. Philip, of London. The reredos is of elaborate design, having, in addition to a lavish amount of enrichment, the advantage of additional richness of colour, imparted by the use of *Devonshire marble* columns. Speaking of this kind of material, we

may remark that serpentine columns were introduced with excellent results in the "Forman Chapel," and the same material has been employed in the large slab for the prayer desk and its smaller columns. The fine peal of bells now raised in the tower have been cast, under the sole direction of E. B. Denison, Esq., Q.C., by Messrs. Warner, of London, and are pronounced equal to any of modern times. The internal effect of the church is greatly enhanced by the lower stage of the tower being exposed from below; the height to the ceiling of this lantern being about ninety feet.

The ancient Roman road, Watling-street, on which the town stands, may be traced over Scawsby Lees, and in many other places northward, towards Castleford. The population of Doncaster in 1861 is returned at 16,403, against 12,052 in 1851. Leaving Doncaster on the left, we pass Cusworth, seated upon an eminence, and surrounded by a spacious park. On the left is Spotborough Hall, the seat of the Copleys, overlooking the lovely vale of the Don, and the South Yorkshire railway. In the church are some monuments of the families of the Fitzwilliams and Copleys.

In the vicinity of Doncaster are several delightful excursions. About sixteen miles distant is *Wentworth House*, the magnificent seat of Earl Fitzwilliam. *Roche Abbey* is about eighteen miles from the town. *Edlington Wood* is about four miles distant, and occupies four hundred acres of ground. Four miles west of Doncaster is *Conisborough Castle*, a romantic ruin overlooking the Don. More distant is *Melton* and its magnificent woods, but the church and hall are not seen through the mass of woodland. Leaving the pretty farm-houses, cottages, and homesteads of *Bentley* to the left, the line proceeds in a straight direction through richly cultivated fields until it reaches *Stockbridge Station*, having crossed the road from Bentley to *Arksey* on the level. The tower of Arksey Church, with its neat little spire, is a beautiful object in the landscape. The burial-place of the Cooke family, long resident in this parish, is here, and the armorial insignia of the principal families in this part of the county, as it stood in the reigns of the second and third Edwards, are emblazoned on the windows.

We now reach the

Arksey and Stockbridge Station, two miles from Doncaster. The parish is in the West Riding of Yorkshire. It has a Free Grammar

School, with an endowment left by Sir Bryan Cooke. After leaving the station, to the right of which is *Kirk Sandall* Old Church, in which is a chantry built in 1481, by Archbishop Rokeby, with his coat-of arms, stained glass, and carved work thereon, we arrive at

ASKERNE STATION, distant four miles and a half from Arksey. This place, which is celebrated for a sulphur spa, is pleasingly seated on the brow of a rocky declivity. The Manor Baths are on the margin of the lake or pool, which covers an area of nearly seven acres, edged by a broad gravel-walk. A few years since Askerne was an insignificant hamlet, comprising a few small cottages. At the present time there are hotels and boarding-houses, and several good residences. This is due chiefly to local circumstances, the salubrity of the air, and the invigorating springs which have been found very beneficial in rheumatic and scorbutic diseases.

It was at Askerne that Ambrosius killed Hengist the Saxon, in 489.

Proceeding forward, on the left is *Campsall*, a village rather more than a mile north-west of Askerne, built on a gentle declivity. And a short distance beyond is *Adwich-le-Street*, which adjunct to its name is derived from its situation on a Roman road. In the church are some monuments to the family of Washington, who formerly resided at the Hall. *Burgh Wallis* is a neat little village; the church contains some curious monuments. Four miles from hence is *Owston Hall*, the seat of the Cooke family. Eight miles east of Askerne is the market town of *Thorne*, seated on the banks of the Don, where there is a junction with the Stainforth and Headley Canal. The rivers Don, Aire, and Ouse, communicating with each other and with the Canal, have greatly contributed to the prosperity of this thriving town.

Two miles from Askerne, we reach

NORTON STATION. In this village there was formerly a Priory. Near this is Fenwick, the residence of the ancient family of Hastings. The church, a modern edifice, is built in the early English style with nave and chancel, and belfry, stall seats and open timber roof. Two miles from Norton is WOMERSLEY STATION. In this village is the residence of Lord Hawke, and in the neighbourhood are *Smeaton Crags*, a beautiful spot much frequented by tourists from Pontefract, Doncaster, &c. One mile west of Womersley is *Stapleton*, a handsome mansion surrounded by a spacious park. Pro-

ceeding further on the right is the township of *Whitley*, beyond which are *Pollington* and *Cowick Park*. Four miles and a half from Womersley is KNOTTINGLEY STATION, from whence there is a

BRANCH LINE TO LEEDS, BRADFORD, HALIFAX, AND WAKEFIELD,

on which we will accompany our readers, returning from the latter place, to rejoin the Main Line to York from Knottingley. Two miles and a half from Knottingley, we reach

PONTEFRACT STATION. The town is well-built, and derives its chief interest from the celebrated castle, in which Richard II. was murdered, and where the Lords Rivers, Grey, and Vaughan were put to death by order of Richard III. It is now in ruins, the only remains consisting of a small circular tower, and part of the lower story. The church of St. Thomas was erected on the spot where Thomas, Earl of Lancaster, was beheaded in 1322; no part of the structure now remains, but its site is perpetuated by a locality called *St. Thomas's Close*. The streets of Pontefract are spacious and clean, the houses are commodious and well-built. The gardens and nursery grounds produce an abundant supply of fruits and vegetables for the neighbouring markets; and are famous for the superior quality of the licorice, which is cultivated extensively, and the making of it into cakes forms the only article of manufacture carried on to any extent. The *Market Place* is a spacious area; in the centre of it was formerly a cross, around which, for a certain space, extended the privilege of freedom from arrest. This cross was removed in 1734, and a neat market-house erected. The town is governed by a Mayor and twelve Aldermen, a Recorder and Town Clerk. The *Town Hall* is a neat building; the lower part is used as a prison. The *Court House* is a structure of freestone. The *Church* is a plain edifice, of which the old tower was taken down and rebuilt in 1707. There are several schools and chapels in the town. About two miles and a half from Pontefract, we reach

METHLEY STATION, and in the course of half an hour we enter

THE town of LEEDS, the queen of the woollen trade, and world renowned for its industrial products. The visitor who may be unacquainted with Leeds must not, however, *expect to find a handsome* town, with splendid public

edifices, and all the concomitants of luxury and wealth. It is the curious observer of England's commercial progress who will see in the appliances of art to manufactures, the surprising energy and perseverance of the employers, and the skill and ingenuity of the artizan, sufficient to interest him in the highest degree.

The early history of Leeds presents a few points of interest. The natural advantages of the town and neighbourhood were remarkable from an early period. Ralph Thoresby tells us that one of his reasons for writing the "Ducatus Leodiensis," was a consideration of the great richness and resources of the country near his native town of Leeds. He selects as a sort of centre, Haslewood, a little distance eastward of the town, and says that the district round Leeds and Haslewood formed the portion of Yorkshire which Bishop Tunstall "showed to King Henry VIII., in his progress to York, anno 1548, which he avowed to be the richest he ever found in all his travels through Europe."

There are not many imposing public buildings in Leeds, with a few exceptions, one of which is the Town Hall, situated in Park-lane, a short distance from the railway station. The foundation stone of this building was laid August 17th, 1853.

It is a handsome structure, designed by Mr. Brodrick, of Leeds, of large dimensions, the great hall being calculated to hold 8,000 persons, and includes assize courts and public hall. The structure stands on a good open site, and occupies a parallelogram of 250 by 200 feet. It has an elevated platform, a peristyle, and a surrounding enclosure of Corinthian columns and pilasters, with entablature and attic, rising to about sixty-five feet. The principal front has a recessed portico of ten columns. It is approached by a flight of twenty-five steps 135 feet in length, with large pedestals for sculpture. The Great Hall is one of the largest, if not *the* largest room in England, its dimensions exceeding the Great St. George's Hall, Liverpool, Birmingham Town Hall, &c. The whole of the apartments and public rooms are connected together by a corridor, which runs entirely round the large hall, connecting the different vestibules and entrances together.

The north end of the hall is occupied by the great organ, which is fifty feet high and the same in breadth. At the south end is a glass screen, separating the hall from the vestibule. The floor is covered *with Minton's* tesselated pavement. In the centre is a statue of the

TOWN HALL, LEEDS.

Queen, of white marble, which, with its polished granite pedestal, stands eighteen feet high. It is by Noble, and was munificently presented by Sir Thomas Fairbairn, the Mayor. This statue was inaugurated on occasion of Her Majesty's visit to Leeds to open the magnificent building we have described, in September, 1858. On the left of the Queen, in one of the recesses, is a colossal statue of the late Edward Baines, M.P., by Behnes. The colour decorations alone of this vestibule and large hall cost £1,600.

There is a large space around the exterior of the building; and the front, or south side, forms a good-sized square, in the centre of which stands a bronze statue, by Marochetti, of the Duke of Wellington, on a polished granite pedestal.

The *Borough Gaol* is situated near Armley, on the south side of the picturesque valley of the Aire, about a mile and a half west of the town. It is a spacious castellated stone structure, presenting a massive pile of masonry, and is visible from many distant points. It was opened in 1847, and cost £43,000. Strangers are permitted to view the gaol by an order from a magistrate.

The *Court House* is a massive stone building in Park-row. The principal front consists of a centre and two wings.

Commercial Buildings, an elegant structure, fronts the west entrance into the town. The style of architecture is Grecian; the plan a parallelogram, with the south-western corner rounded off, and formed into a spacious and elegant circular portico. The interior is remarkably handsome. On the ground-floor is the news-room, and attached to it are apartments for the superintendent and the committee. The upper rooms are occupied by the Leeds District Court of Bankruptcy. The *Peel Statue*, of bronze, stands fronting the Commercial Buildings.

The *Music Hall* in Albion-street is a plain but commodious building, and in the same street is the *Post Office*.

The *Cavalry Barracks* are entered in Chapeltown-road. This extensive range of buildings was erected in 1820 at a cost of £28,000, and occupies an area of eleven acres of ground, in an open and healthy locality.

The *Leeds Club* is held in a building conveniently situated in Albion-place, Albion-street, and contains handsome apartments, furnished with every luxury and comfort. The *Union Club* is established in Wood's-yard, Briggate.

The new *Workhouse* occupies a commanding site in a salubrious situation at Burmantofts.

Railway Stations.—The *Marsh-lane* railway station was erected in 1834, by the Leeds and Selby Railway Company, whose line was the first that was opened in connexion with Leeds.

The *Central Station*, like the Wellington, is also situated in Wellington-street. It is a spacious structure in the Grecian style, and cost £30,000. There are three platforms, 130 feet long by 20 feet wide. The roof is principally of glass, and one end of the station is also covered in. The Station is the property of the Great Northern Railway Com

pany, and is also used for the Lancashire and Yorkshire, the Leeds, Bradford and Halifax, and the Leeds and Wakefield lines.

The *Wellington Railway Station* is one of the largest and most complete structures of its kind in the kingdom. It is the property of the Midland Railway Company, but is also used by the London and North Western and the North-Eastern Companies. It is admirably situated, being within two or three minutes' walk of the principal streets, places of business, and public buildings of the town.

BRIDGES.—The *Leeds Bridge*, at the bottom of Briggate, has five arches. The original structure was probably of Norman origin, though the name of the street would intimate of Saxon.

The *Wellington Bridge* is a handsome erection of one large elliptical arch, 100 feet span, designed and executed by Rennie. It affords communication with the township of Wortley and Armley.

Victoria Bridge, School Close, consists of one arch, eighty feet span.

Crown Point Bridge crosses the Aire, a little above the Nether Mill Weir. It opens a direct communication between Hunslet-lane and the southern parts of the town, to Kirkgate and the northern and eastern districts.

The *Suspension Bridge*, near Hunslet, is of a very curious construction; the suspending arch is about 150 feet span. *Monk Bridge*, on the Geldard-road, is on the suspension principle.

There are many other bridges over small streams. Those built by the railway are massive and grand.

INSTITUTIONS, SOCIETIES, CHARITIES, &c.—The *Leeds Philosophical and Literary Society* is established in Bond-street. The structure is handsome, and of stone, with two stories. The principal entrance opens into a vestibule, leading to a commodious Lecture-hall, Council room, Library, and Ante-room. The principal apartments of the Museum are in the upper story, and consist of curator's room, geological and zoological room. The Museum is equal, if not superior, to that of any other provincial institution in the kingdom.

The *Mechanics' Institution and Literary Society* is established in South-parade. The building is plain, but tolerably commodious. The ground-floor is occupied for schools connected with the Institute, and the upper consists of the large room used as a lecture and news room.

The *Leeds School of Practical Art* is a branch of the last society, and

is also connected with the Department of Science and Art, South Kensington. It was established in 1847, for the purpose of instructing young men in art and industry.

The *Church Institute* is in Bond-street; it has an excellent library and there are classes for instruction in useful knowledge. The *Young Men's Christian Institute* is situated in East-parade. The *Catholic Literary Institution* is in Upper Albion-street; *School of Medicine*, in East-parade. Attendance upon the lectures delivered in this Institution confer the same qualification for examination as is obtained in the London Medical Schools.

The *General Infirmary* was opened in 1767. It is a spacious but plain building of red brick, with stone facings; gardens and pleasure grounds are attached. It is supported by annual subscriptions and collections.

The *House of Recovery* is at Burmantofts. The building stands on an elevated site, within an enclosure, laid out as gardens. All persons labouring under infectious fevers, unable to provide medicines, are received here, subject to the payment of 1*s.* 9*d.* per day from the respective townships.

The *Public Dispensary* is in North-street. Its chief peculiarity consists in the visitation of the poor, *in their own homes*, by the medical officers.

Leeds also possesses a *General Eye and Ear Infirmary; Dispensary for Diseases of the Skin; Hospital for Women and Children; Tradesmen's Benevolent Institution*, the object of which is to grant pensions to distressed reputable merchants, manufacturers, tradesmen, and others in old age, and also to their widows; the *Charitable Enquiry Office* to ascertain the circumstances of mendicants and relieve the deserving poor; *Jenkinson's and Dally's Almshouses*, the most ancient of their kind in the town, founded in 1643; *Dixon's Charity for Clergymen's Widows; Harrison's Hospital*, founded in 1653; *Potter's Hospital* founded, according to the inscription on a tablet, for "ten virtuous poor widows;" *Strangers' Friend Society, Church Visiting Society, Annuitant Society, Guardian Society and General Penitentiary, Invalids' Kitchen, Model Lodging House, Savings Bank, Temperance Society, Leeds Co-operative Flour and Provision Society*, for the purpose of supplying its members with flour of the best quality at the lowest

possible price; *Friendly Loan Society*, &c. &c. The various societies of the district number about 20,000 members, and are the means of a great diminution of human misery.

There are numerous churches in Leeds. *St. Peter's*, the parochial edifice, is an excellent specimen of the Later Decorated style of architecture. The nave and the chancel are so planned as to form one clear vista, 160 feet in length, 28 wide, and 57 high. A transept crosses between the nave and the choir, having a tower at its north end; and there is a sort of additional north aisle, which forms ante-chapels, east and west of the tower. The transept tower rises to a height of about 130 feet. Taken as a whole, this church is one of the greatest ornaments of the town. The parish church schools occupy about half an acre of ground on the north-east side of the parish church. These can readily accommodate 937 children. The buildings comprise three teachers' residences, with boys', girls', and infant schools. The principal entrance to the parish church through the north door, leads to the south transept. As we proceed, the eye rests upon a screen of richly carved oak, separating the opposite transept from the nave; within this screen is placed the organ, which is almost entirely new. The altar is approached by seven steps, and the low open screen-work at the altar is of stone, and has a light and elegant appearance. The altar has a covering of purple velvet, on which is a richly embroidered monogram, the gift of the late Queen Dowager. In the centre of the altar is a carved stone frame, in which is a painting representing Christ's Agony in the Garden. The grand east window is adorned with stained glass. The ancient cover of the piscina of the fourteenth century is placed in the south-east wall of the chancel, and is converted into a monument to Thoresby, the antiquary. The pulpit is of wood, elaborately carved. The galleries are supported by small iron pillars, the fronts being richly carved. The great west window is richly stained. In the ante-chapel is a fine monument by Flaxman, to the memory of Captain Richard Beckett, and Captain Samuel Walker, who both died at Talavera. Under the north-east window of the ante-chapel is the handsome tomb, of Caen stone, of Christopher Beckett, Esq. There are numerous interesting memorials to the dead.

Besides St. Peter's, the parish church, there are now thirty-five district churches in the parish of Leeds, of which twenty-five are in the

town and suburbs. Eleven of the district churches have been consti tuted parochial vicarages; the other twenty-four are perpetual curacies The eleven new vicarages and ecclesiastical parishes are Hunslet St. John's, Little Holbeck, All Saints, St. Andrew's, St. Mark's St. Saviour's, New Wortley, Burmantofts, Burley, and Meanwood.

There are also in the town and suburbs nearly one hundred chapels belonging to the Methodists, the various Congregational Dissenters, and Roman Catholics.

The EDUCATIONAL BUILDINGS are not of much mark or feature, but they are *numerous*, which more than compensates for architectural deficiencies. A handsome new grammar-school has been erected near Woodhouse Moor, and was opened in 1859. The Industrial School in Burmantofts is, however, an exception in this latter point. The building is Elizabethan, and has an enriched front nearly 300 feet in length. The interior arrangements are very complete. Though Leeds cannot boast of a University, yet it may be proud of its excellent seminaries. Not to refer to private schools, there are two public educational establishments worthy of special mention:—The *Grammar School*, free to all boys of the parish, for classical learning and mathematics; and the *School of the Mechanics' Institution*. For the poorer classes, there are the Industrial, Lancasterian, National, and other schools. Nor is art instruction overlooked. A very handsome building, in Park-road, has lately been completed, belonging to the Mill-street Chapel, for their schools.

The new workhouse is a striking building, and is now in course of erection at Burmantofts. The markets, ancient and modern, are worth a visit.

The bridges spanning the Aire, which runs through Leeds in a direction nearly east and west, afford good views of the town itself, with its primitive excrescences and modern improvements. There is a fair sprinkling of libraries and literary societies in Leeds; one of the former, founded by Dr. Priestley, is one of the most extensive in the north of England, and occupies a room of great beauty and magnitude.

Population of Leeds in 1861, 207,134, against 172,258 in 1851.

There are also some very fine cloth warehouses, built and building in Wellington-street. Many of these are very important additions to the town, and worthy of notice to travellers.

The neighbourhood of Leeds abounds in interest, and will well repay

the visitor for his pedestrian exertions. Among the principal places may be mentioned KIRKSTALL ABBEY, the ruins of which are situated three miles W.N.W. from Leeds on the road to Bradford. The village is beautifully situated on the banks of the Aire. The ruins of the abbey are in a lonely and sequestered spot, where the surrounding valley of Airedale heard only the matin and vesper bell of the monks, the bleating of the flocks, and the lowing of the herds in their peaceful pastures; but now standing near cloth factories, close to a thronged room and a whirling railway, with the waters of the "crystal Aire" discoloured. It was founded by Henry de Laci, in 1152, for monks of the Cistercian order, and dedicated to the Blessed Virgin. Alexander, Prior of Fountains, was the first abbot. At the Dissolution, in 1540, it was sur-

RUINS OF KIRKSTALL ABBEY, NEAR LEEDS.

rendered by John Ripley, the twenty-seventh abbot. The site was then granted by Henry VIII. to Cranmer, Archbishop of Canterbury, in exchange for other lands; but it was afterwards alienated to Peter Hammond, and ultimately came into the possession of the present proprietor, the Earl of Cardigan. *In 1856,* a committee of gentlemen took

this interesting ruin and ground on lease. On removing the rubbis accumulated in and around the building, several ancient relics were di covered. It is open to the public on the payment of a small fee.

The village stands about a quarter of a mile east of the abbey, an consists of numerous well-built houses, with an hotel; and in th immediate vicinity, which abounds with richly varied scenery, are som pleasant mansions and villas, particularly *Kirkstall Grange*, the seat o William Beckett, Esq., and *Abbey House*. There is a handsome bridg over the river and canal. Several extensive factories are adjacent The church, situated on an eminence, is in the early English style, wit a tower, surmounted by a lofty spire.

Kirkstall is accessible almost every hour during the day by the Leed and Bradford Railway; also by the North-Eastern, which is the mor pleasing route, six times during the day.

ADEL is a small scattered village five miles N.N.W. of Leeds, on th Otley road, rendered famous by its ancient church and Roman remains The church is one of the most perfect specimens of ancient Norma architecture in the kingdom. The Leeds Reformatory School is in thi parish.

About a mile from Adel is *Cookridge Hall* and *Park*, formerly a sea of the celebrated poet and statesman, Edward Sheffield, Duke o Buckingham.

Armley is two miles W. by N. of Leeds, on the south side of th Aire. It is very populous, and extends a considerable distance alon the acclivities of the vale, and is chiefly inhabited by clothiers. Nea the village was a Danish fortification. Not far from the village, on a eminence, is *Armley House*, designed by Smirke. It stands in a richly wooded park.

Chapel-Allerton is two miles N. by E. of Leeds, on the Harewoo and Harrogate road. It is a neat and pleasant village, on an eminence

There is a very pretty church at *Moor-Allerton*, built by subscriptio in 1850-1, and another handsome church at Meanwood. Near thi place is a conspicuous eminence called Tunnel Haw-Hill, on which i erected an arch, in commemoration of Alfred the Great. *Gledhow* i remarkable for its picturesque and beautiful woodland scenery.

Fulneck is six miles S.W. of Leeds, and two miles south of th *Stainningley* railway station, and is a settlement of the Unite

Brethren, or Moravians. Here James Montgomery received his education.

Harewood, one of the pleasantest villages in Yorkshire, lies on the Leeds and Harrogate road, about eight miles N. of Leeds. It boasts an ancient castle of great size and strength, a church filled with magnificent sculptured tombs of the fourteenth century, and a modern palace, Harewood Hall, the seat of the Earl of Harewood. The castle stands on the brow of a hill, overlooking the plain of York to the east, and the valley of the Wharfe to the west and north. It was evidently erected soon after the Conquest; but was enlarged, and partly rebuilt, about 1327. It had originally four towers of great size and strength, two of which are still in ruins, clothed with ivy to their very summits.

In the Great Hall is a most elaborate Gothic arch. The chapel contains several windows of great architectural beauty. Surmounting the window, over the principal entrance, are the arms of the founder, Sir William de Aldburgh, with the motto, "Vat sal be, sal." The portcullis-room, and groove for the portcullis, the dungeons, sally-ports, and various rooms, are still traceable.

The church, an ancient and venerable fabric, stands in the park, about one mile west of the village. It is richly adorned with monuments; among them is that of the famous Judge Gascoigne, immortalized by Shakspere.

Harewood House was erected in 1759. The length of the building is 250 feet, and the width 89 feet, displaying all the richness of Corinthian architecture. It stands on an elevated position, in a park of great beauty and extent, consisting of 1,800 acres. The pleasure-grounds comprise nearly 150 acres. The Entrance-hall is supported at the sides by sixteen Doric columns and pilasters, and the walls are enriched by basso-relievos. The library ceiling terminates in a cone, and is adorned with basso-relievos. The saloon ceiling is decorated with paintings by Zuechi; the two chimney-pieces are very elegant. The gallery has been recently decorated; it occupies the whole of the west wing: the ceiling is painted by Rebecci. In this room are also fine portraits and busts, and a magnificent collection of antique china, valued at £100,000. The collection of paintings and curiosities is exceedingly valuable.

Visitors are permitted to see the mansion every Thursday from 11 A.M. to 4 P.M.

Headingley is two miles and a half N.W. from Leeds, over Woodhouse Moor, on the Otley-road. It is a pleasant village, studded round with spacious mansions and villas. The Leeds Botanical and Zoological Gardens are near. The church is a handsome structure in the later English style. There is also a striking-looking Gothic place of worship for the Wesleyans. This village is famous for a very ancient oak.

Methley, eight miles E.S.E. from Leeds, is a village situated amidst beautiful sylvan scenery. *Methley Hall*, the residence of Titus Salt, Esq., M.P., is a stately and elegant mansion, deriving its name from this village. It was originally a castellated edifice, surrounded by a moat,

METHLEY HALL, THE RESIDENCE OF TITUS SALT, ESQ., M.P.

and stands in a spacious park. The church is a fine ancient structure containing several handsome monuments. The Waterton Chapel divided from the church by a beautiful screen of perpendicular tracery is remarkably interesting, and contains several highly interesting tombs.

Roundhay is a delightful village, three miles N.N.E. from Leeds, on the road to Wetherby. There is a handsome new church of stone in the early English style.

Whitkirk is four miles E. from Leeds. It is a small but ancient

village. The church, a spacious and striking edifice, contains several fine monuments of great interest, and, seated on an eminence, forms a conspicuous and graceful feature in the landscape. It was built about the time of Henry VII.; a chantry for two priests was founded by William Scargill, Esq., on the south side, in which are several handsome monuments, including a fine Altar Tomb to Robert Scargill, Esq. (son of the founder), and his wife, two cumbent gures with hands uplifted on their breasts, the knight in plate armour; a magnificent monument of Edward, Viscount Irwine, the statue, a fine figure, reclining on one elbow, and the drapery excellent; and next a monument to the late Lord and Lady Irwine (the latter of whom spent a long and benevolent life here), executed by Nollekens. On the north wall of the choir is a mural inscription to the memory of John Smeaton, F.R.S., builder of the Eddystone Lighthouse. The church has recently been restored, and one of the windows filled with beautiful stained glass, by Willement, in memory of the late Mrs. Waud. There are excellent schools, and a Wesleyan chapel, and various charitable trusts for distribution among the poor. Near this village is *Temple Newsam*, the seat of H. C. M. Ingram, Esq. It stands on a bold and commanding situation, and covers a great extent of ground. The architecture is a fine specimen of the period of James I.

The library is a handsome room. The picture-gallery contains a very valuable collection of ancient paintings.

In Doomsday Book it is called *Newhusam*, and a settlement or preceptory of Knights Templars, in 1181, gave it the additional name of Templar. On the suppression of their order in 1311, it was given by King Edward III. to Sir John D'Arcy and his heirs. In 1544, Thomas, Lord D'Arcy (who was beheaded for the insurrection called the Pilgrimage of Grace, *temp.* Henry VIII.), gave it to Matthew, Earl of Lennox, and the Lady Margaret, his wife, whose son Lord Darnley, the husband of Mary, Queen of Scots, and father of King James I. of England, and VI. of Scotland, was born here; James I. gave it to his kinsman, the Duke of Lennox, who sold it to Sir Arthur Ingram; he pulled down the old Hall and built the present "Noble Palace," which is surrounded by an extensive park and pleasure grounds, finely shaded with ancient patriarchal woods. The noble families of Lennox, Irwine, and Hertford, have resided here.

THE COMMERCIAL ASPECT OF LEEDS.

This important and flourishing town, the principal emporium of the woollen manufacturers in the West Riding of Yorkshire, is one of the most interesting, in many points of view, of our northern towns. Though the spinning of worsted and the manufacture of worsted stuffs is not extensively followed at Leeds, vast quantities of these goods are brought there to be dyed and finished. The dry-houses and dressing shops at Leeds are very extensive. In these establishments both the woollen and worsted goods are finished, after being purchased in the rough at the cloth-halls and piece-halls of the clothing towns. The mills at Leeds for the spinning of flax for canvas, linen, sacking, thread, &c., are very extensive. There are also large manufactures of glass, earthenware, steam-engines, locomotives, and all kinds of machinery. These and the other operations of the district are facilitated by the abundant supply of coal produced by the mines in the vicinity of the town.

The West Riding of Yorkshire exhibits an area of nearly forty miles by twenty, occupied by cloth-

ing towns and villages. Leeds, Bradford, Halifax, Huddersfield, Dewsbury, and Wakefield are the great manufacturing centres. Mixed or coloured cloths are made principally in the villages west of Leeds and of Wakefield; white or undyed cloths are made chiefly in the villages occupying a belt of country extending from near Wakefield to Shipley.

The cloth halls at Leeds are divided into long walks or galleries, consisting of two rows of stands, each of which is marked with the name of the person by whom it is occupied. On these stands the cloth is exposed for sale; and when the market opens, the manufacturers take their stations at the stands behind their goods; the merchants or buyers passing to make their purchases through the avenues.

The largest commercial buildings in Leeds are these *Cloth Halls*, which are very spacious: that in Wellington-street, the Mixed Cloth, is a quadrangular pile, 380 feet long by 200 feet broad, and contains 1,780 freehold stalls, arranged in six streets. The White Cloth Hall, in Calls, built in 1775, is a similar structure, 300 feet long, with five streets and about 1,200 stands. In West Bar are the Commercial Buildings, including an Exchange and News-room, in the Grecian style, built in 1829. The area of ground covered by this establishment occupies more than 1,300 square yards.

Many of the trading establishments in the town vie in importance with some of the best metropolitan houses; and, as far as our experience serves, they are conducted with a civility and readiness which are at all times grateful to the visitor. Any information will be supplied by Messrs. Fenteman, the booksellers, of Boar-lane, of whom may be purchased the "Handbook to Leeds." We have often heard the expression applied to Leeds, that it is a "thinking" town. The general intelligence of the inhabitants certainly warrants the assertion.

The Flax-Spinning Mill of Messrs. Marshall & Co.

The Messrs. Marshall are the owners of the great flax-mill shown on the next page, and into which, by the courtesy of the proprietors, we now introduce the reader. The beautiful and imposing exterior is so admirably rendered by our artist that description is unnecessary, therefore we will sign our names in the book kept for that purpose, and at once pass into the weaving-room, crowded with neatly-dressed, healthy-looking girls and women; and here at once we are constrained to draw a com-

parison between the females now before us and those employed in the Lancashire mills—we need scarcely add, in favour of the former. In these works there are no less than 2,500 hands constantly employed. The building is 132 yards long and 72 yards wide, measured on the inside; the roof consists of 72 brick arches, supported on 72 iron pillars, secured together by strong ironwork: this roof has a thick coating of composition, and is covered with earth, from which has sprung up a beautiful green sward; there are 66 glass domes, each 48 feet in circumference, in the roof, containing ten tons of glass, the entire weight of the roof being 4,000 tons; the area is 9,504 square yards, or nearly 2 acres. The machinery is driven by a pair of 100-horse engines, besides several of smaller power. The largest room of one floor would contain nearly 80,000 persons. Upwards of 70,000,000 yards of linen yarn are spun *daily*, a portion of which is made into sewing-thread, another portion into linen cloth, and the remainder sold to other manufacturers. It is clearly impossible for us to enter into details connected with this stupendous establishment, to do full justice to which we should have to devote several pages of our limited space; we will therefore pass out on the opposite side of the building from that at which we entered, and take a glance at the beautiful church, erected at the sole cost of this munificent firm, and then step in the schools, also built and fostered by them. In these latter we shall observe over 500 boys, and about 500 girls, most of them employed in the mill, but *all* of them being educated at the expense of Messrs. Marshall, who for this purpose have engaged the services of competent teachers. During our many journeys over the Great Northern Railway, we have met with nothing so interesting or more suggestive than our visit to this mill. [See Commercial Aspect of Leeds, in our Guide to the North-Western Railway.]

The Perseverance Iron Works of Messrs. Joseph Whitham and Sons, Kirkstall Road.

These extensive premises are admirably adapted for the large and important business which is carried on here. This comprises almost every variety of work, from Steam Boilers and Engines, to the manufacture of Bar, Rod, Hoop, Plate, Sheet Iron, &c. The proprietors of the Perseverance Iron Works have long had the distinction of perfecting in a very *superior* and substantial manner their

productions. In the case of steam boilers and engines, where it is requisite that the greatest care should be taken in their manufacture to prevent the possibility of accident, Messrs. Joseph Whitham and Sons have achieved a well-merited success. Dr. William Fairbairn, in his "Useful Information to Engineers," observes, that "when we look around us and count the number of steam-engines at work in every city, town, and hamlet; when we see them traverse the rail, and depart across the ocean with unerring certainty, and consider at the same time the necessity of having all these movements under safe control, it assuredly follows that the makers of these engines, and those who employ them, should bring to their construction and superintendence a large degree of intelligence, and a full knowledge of their principles." This experience has been obtained by Messrs. Joseph Whitham and Sons, during a long and earnest application to their pursuits, and the names of these gentlemen are sufficient to insure a perfect reliance upon their manufactures. The supplies of Bar, Rod, Hoop, Plate, and Sheet Iron prepared at the Perseverance Works are enormous. What is termed *Foundry Iron* is of three qualities. No. 1 foundry contains the most carbon, being, in fact, combined with as much carbon as it is capable of holding; and coke presenting the fibrous appearance of charcoal, as the purest carbon, is selected for it. This iron is so soft and fluid that it may be run into the finest mouldings. Its appearance is smooth, except at a fracture, where it exhibits a large bright dark open grain, with light spots, and it does not ring when broken but sounds more like lead. No. 2 possesses the same qualities, but in a less degree, and is more suitable for the stronger parts of machinery. No. 3 is frequently called *dark grey iron*, and is frequently used where great strength is required, as for rails, shafts, wheels, and cylinders; it is also as frequently used for the forge. There are also three sorts of Forge Iron, viz., *bright*, which is used for heavy castings only; *mottled*, which is used exclusively for the forge, being too thick and brittle for the foundry; and *white*, which contains the least carbon of any, and is totally unfit for casting on account of its thickness when fluid.

All descriptions of Castings, both heavy and light, are done at the Perseverance Iron Works; and as this important branch of the art is but little known to the uninitiated, and embraces an immense field of *useful and novel* operations, we will describe in a few words the process

THE PERSEVERANCE IRON WORKS OF MESSRS. JOSEPH WHITHAM AND SONS, KIRKSTALL ROAD.

Founding is practised either in casting any quantity of metal in the solid, or with a score (by means of which the metal is preserved of a determined thickness or substance), or in plain casting. Before any article can be cast in metal, it is necessary that a model of it be prepared. The models must be made of various substances—clay or wax, or sand with clay, are those usually employed; but they may also be made of wood, stone, or any other material. Upon these models moulds must be made: these are commonly composed of plaster of Paris, mixed with brick-dust, sometimes sand, or sand with a mixture of cow-hair. For moulds for iron or brass work, yellowish sharp sand is preferred; which is prepared by mixing it with water, and then rolling it on a flat board till it is well kneaded and fit for use. If the article is cylindrical, or of a form that admits of it, it is moulded and cast in two pieces; these two parts are then carefully joined together, and the edges or seams cleaned. For the smaller class of work, instead of running the metal at once from a large furnace, earthen crucibles are used, into which the metal is thrown in small pieces; the crucible is placed in a strong heat in a close stove, and as the metal is melted and sinks, more is added until the vessel is full. It is then lifted out by means of iron instruments adapted to the purpose, and the metal is poured from it into the mould, in which channels or ducts for receiving it have been previously made.

In noticing the different ways of casting, mention has been made of one in which a core is used. The core, as its name denotes, is a part or portion situate within the body of the cast; and its purpose is to form a centre to the work by which the thickness or the substance of the metal may be regulated. In coring, the mould is first made complete into this clay or wax, or any other fit substance or material, is then squeezed or pressed in a layer of uniform thickness; in large works it is usually from half an inch to an inch thick. This layer represents the metal. The mould, if in parts, is then put together, the above-mentioned layer being left within it, and into the open space of the centre a composition (usually of plaster of Paris, with other substances mixed with it) is introduced, and made to adhere to the clay or wax, or rather is filled up to it. This is the core, and is often made to occupy the whole interior of the mould. When this is set or dry, the mould is *taken to pieces*, and the material which has been made to represent the

metal is removed. The mould is then again carefully put together round its core or nucleus, the two portions being secured from contact by stops and keys properly arranged for that purpose. The mould and core are dried to dissipate moisture; and large moulds are strengthened with iron hoops. Channels or ducts are made for the entrance of the melted metal, and others are also made for allowing the air to escape as the melted metal enters the moulds: these are called *vents*. With respect to placing the mould, it is only important to secure a sufficient inclination of plane from the mouth of the furnace to the mould that the metal may run easily and uninterruptedly, and not have time to grow cool, and therefore sluggish. The usual method in bronze works of large size is to bury the mould in a pit a little below the level of the furnace, and by running sand firmly round it, to insure its not being affected by any sudden or violent shock, or by the weight of the metal running into it. When everything is ready and the metal found to be in a state fit for running, the orifice or mouth of the furnace (which is usually plugged with the clay or sand) is opened, when the metal descends, and in a few minutes the mould is filled. The metal is allowed to run until it overflows the mouths of the channels into the moulds. The work is then left to cool; after which the mould is scraped or knocked off, and the cast undergoes the necessary process (such as cleaning, chasing, &c.) to render it fit for the purpose designed.

Having glanced at the interesting processes of casting which may be seen in the Perseverance Iron Foundry, we will return to our notice of these colossal works, by stating that almost every description of Iron-work is made here: Stationary Steam-Engines, both compound and single cylinders, from two-horse power and upward to any size; Steam Boilers of every description, and to any length and diameter. Another branch of manufacture is Iron Girders, suitable for railway bridges; also Hydraulic Presses and Pumps, either to work by hand or power, suitable for oil-mills, or cloth-presses, or anything else for which hydraulic pressure is used.

Hydraulic machinery has been brought to its present efficient state by many successive improvements. It may be remarked, however, that on account of the high degree of perfection which, within a few years past, the steam-engine has attained, the employment of hydraulic machines for raising great quantities of water, or as first movers with

respect to extensive works of any kind, has of late considerably diminished. Yet, where the circumstances are favourable, as when a supply of water for working the machine can be readily obtained, the latter, from being less expensive in their construction, are still preferred to the former.

To our list of the manufactures at the Perseverance Iron Works, we may add Oil-Mill Machinery, the plant all complete; that is, engine-boilers, shafting, presses, pumps, edge-stones, kettles, &c. &c.

The extraction of oil from seeds, such as linseed, hempseed, rapeseed, &c., requires considerable pressure. The mode of obtaining linseed oil from linseed or flaxseed includes many singular processes.

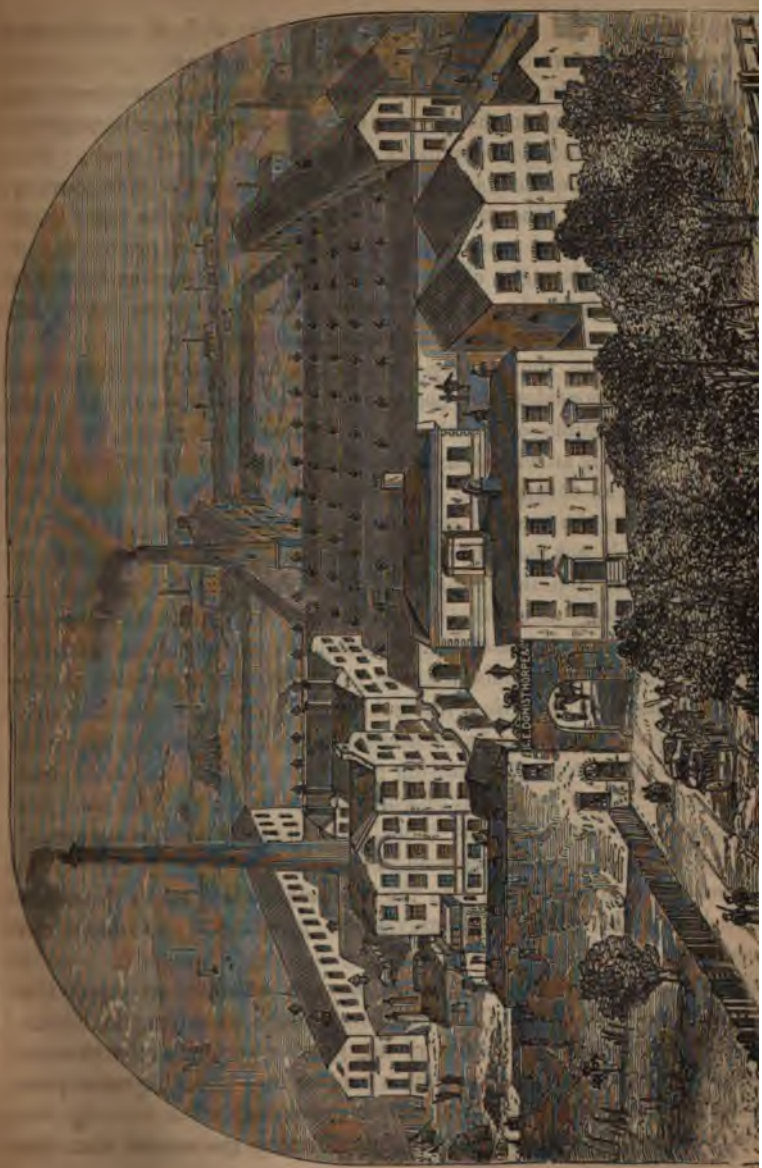
Messrs. Whitham and Sons are also manufacturers of all kinds of Milling-Work, Fulling Machines, &c. &c.; Corn-Mills, the plant all complete; Leather-Rolling Mills, Leather-splitting Machines, Bark-Mills, &c., and all the requisites for tanning purposes; gas-apparatus, Water-Wheels, &c.; Lathes, Planing-Machines, and various other tools too numerous to mention; Spew, Bevel, and Mitre Wheel Patterns; Weighing Machines, from half a ton to sixteen tons.

A visit to these remarkable works, in which an immense number of labourers are employed, will greatly please the visitor. A foundry such as this has peculiar claims to attention; for the numberless and wonderful purposes to which iron is now applied, render this metal one of the principal sources of our national greatness and prosperity.

The Wool-Combing Machinery Works of Messrs. G. E. Donisthorpe and Co.

The business carried on in this extensive establishment is that of Combing Wool by Machinery—a system now generally adopted throughout the worsted, or staple trade of Bradford. Some portion of the premises is, however, employed in spinning woollen and hosiery yarns, and consumes the very fine short wool, which is not adapted for combing purposes.

The combing machine is a very interesting illustration of the rapid progress made within the last fifteen or twenty years in superseding hand labour, and in obviating the repeated strikes which formerly took *place amongst* the hand-combers, to the great annoyance, and often ruin


M. & C. CONSTANTINE

of employers, to the injurious effects on trade, and of course the consequent distress which was always an inevitable result.

When this valuable machine first began to succeed, great alarm was felt by those interested in the worsted trade as to the future occupation of the numerous hand-combers likely to be thrown out of work. This was happily soon dispelled, as the unbounded resources of this country enabled them to find other means of employment, while the trade itself has so largely increased in consequence of the cheapened production of stuff-goods, chiefly brought about by its use, that at present labour is even dearer than formerly, and the working class are much better off, and on far more amicable terms with their employers.

Mr. Donisthorpe, the leading partner in this establishment, has occupied no inconsiderable position in the development of this machine, the principle of which, and of those generally used, he is the inventor; and it is an admitted fact that he, together with Mr. Samuel Cunliffe Lister, an enterprising capitalist of Bradford, have been instrumental in raising the trade of Bradford to its present immense importance; and had it not been for this invention, the trade could not have been done. Mr. Hensam, in his "Report on the Civil Engineering and Machinery General" of the Great Exhibition of 1851, gives the following testimony to the excellence of Mr. Donisthorpe's wool-combing machine. "It is one of the most effective ever produced, for, unlike the cotton gin, which modern invention has not perfected to separate filaments from hard seed, we here find an automatic machine performing the much more difficult operation of separating the long wool from the short; and the success of it may be judged of when I state that uncombed wool put in at one side comes out at the other side, the long completely sorted from the short, and much increased in value."

A few facts in connexion with the business carried on in the above establishment, of which an engraving is given, will no doubt be interesting.

The work done by these machines may be estimated to supply the place of about 1500 men (hand-combers), and economizing in labour alone about 75 per cent., besides giving great superiority in workmanship, and treating the wool in such a manner that a much greater proportion of that which is most valuable is preserved.

We will conclude these remarks by informing the reader that the

astonishing number of sheep required for the growth of wool to keep this establishment in constant operation, is about 900,000, or *nearly approaching a million!*

The visitor to Leeds (who will, no doubt, profit by his stay, to see the works of Messrs. Donisthorpe and Co.) will be much impressed with the beauty and ingenuity of the machinery invented by Mr. Donisthorpe.

Messrs. D. and J. Cooper, Cloth Manufacturers, Wellington Mills.

The manufacture of cloth is one of the most important in Leeds. From a remote period it has been a distinguishing trade of this town. The earliest notice is from a record in the Tower of London, of the 47th Edward III., 1373, which refers to the fulling-mills near the Castle. Their locality would be in the neighbourhood of Mill Hill.

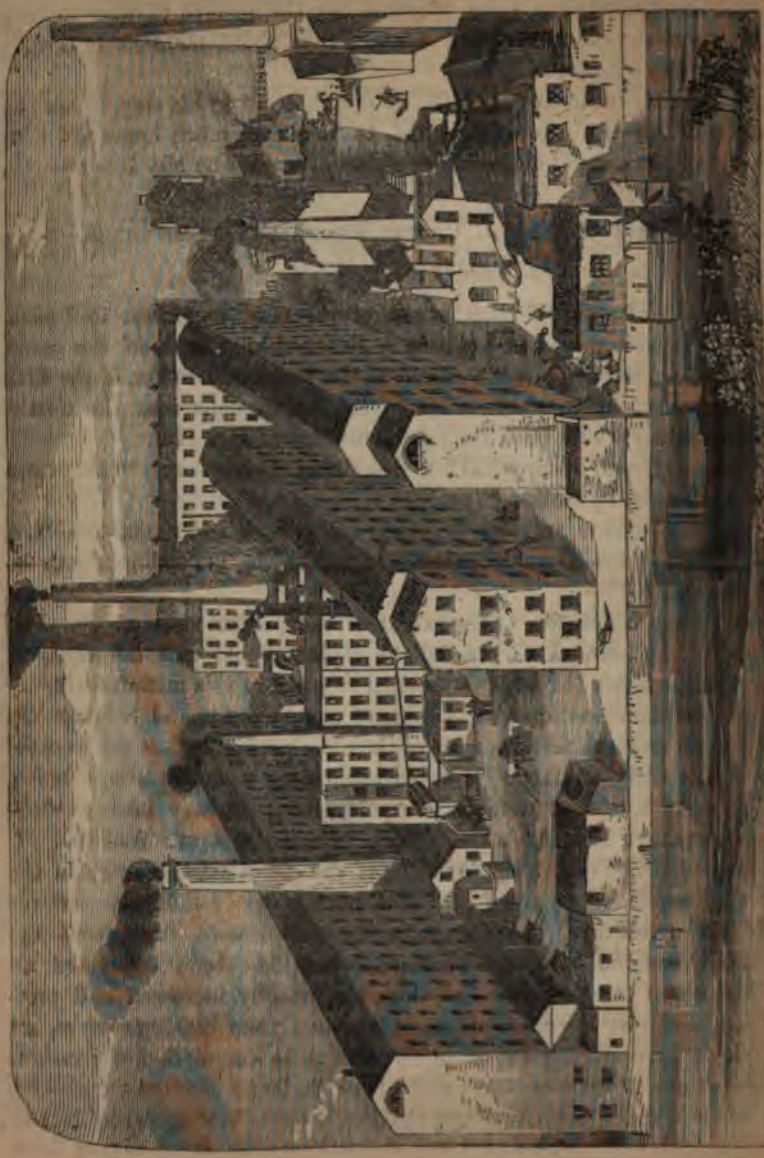
Leland (*temp.* Henry VIII.), describing Leeds, says, "the town standeth most by clothing."

Lord Clarendon, in 1642, speaking of Leeds, Halifax, and Bradford, calls them, "three very populous and rich towns, depending wholly on clothiers."

To form a conception of the extent of the present state of the cloth trade in the borough of Leeds, the reader should visit the valley of the Aire, and see the large population engaged in this manufacture.

In this immense district, a mass of men, women, and children are employed on cloth fabrics; most of them are produced from the wools of Australia and Germany. It is an astounding fact, that the whole of this produce, almost without exception, finds its way into Leeds—the greatest Emporium for Cloth in the Civilized World.

Messrs. D. and J. Cooper's is one of the oldest existing firms in the woollen trade in the town of Leeds, having been established upwards of half a century, and consequently well known throughout the United Kingdom. Their business, which has been conducted on principles of integrity and liberality, has steadily increased and prospered, and now gives employment to more than 400 operatives, all engaged in preparing for, or in forwarding to completion, the various productions of the loom—in proof of which, let us conduct our readers to their extensive manufactory known as the Wellington Mills,



which cover 11,250 square yards. There are four steam engines of 200-horse power.

We can imagine no more genuine pleasure, to the intelligent and thoughtful observer, than to be allowed to pass through the mills of Messrs. Cooper. We will briefly describe the process.

The wool is first sorted into different qualities, the finest being called picklock, and used in the production of the best cloths; it is then steeped for a short time in a hot alkaline liquor and washed off in cold water, to cleanse it from its natural impurites, and prepare it for dyeing or the subsequent processes; it is then placed upon a drying apparatus, after which it is dusted and the fibres of the wool separated by a machine called a Shake-Willy. It is then placed in layers upon the floor and freely sprinkled with Gallipoli oil, which answers two purposes, for it not only softens the wool, and makes it easier to scribble and spin, but materially assists in the scouring of the cloth; it seems also to have a very sanitary effect upon the workpeople, for to no other cause could we assign the remarkably healthy appearance of the workers, chiefly women, in the Scribbling-Rooms, into which the oiled wool is now brought. Here, a few years ago, the set of machines were of three kinds—the Scribbler, the Carder, and the Billy, or Slubbing Machine; the first two very similar in character, the Carder being little more than a continuation of the Scribbler. The oiled wool, being fed or placed by hand upon the feed-sheet of the Scribbler, is carried rapidly through the machine, falling off in appearance like a thin and finely interwoven veil; the scribbled wool is then carried in a similar way through the Carder, and comes off in cardings of about three-eights of an inch thick, and was formerly piecened by children, of whom there were generally from two to three for each machine.

But undoubtedly the greatest and most recent improvement in this department of work, causing a complete revolution in the scribbling department, is the machine very appropriately named a Condenser.

This machine, a perfect model of beauty and simplicity in its arrangements, condenses within a comparatively small space the joint productions of the Piecing or continuous Carding Machine, and the large and cumbrous Slubbing Machine, the use of both of which is entirely supersedes, besides accomplishing the labour in a very superior manner. Messrs. *Cooper, with characteristic* enterprise, were the first

to introduce this machine into the district, and have at their mills a many as sixteen of them at work.

The condensed yarn is now taken to the Mules or Spinning Machines somewhat similar in their working principle to the Slubbing Machine but of a more elaborated and beautiful character, fixed generally in pairs of about 600 spindles, and superintended by one adult workman with two girls or boys to assist in tying up or piecing the threads that may break in the drawing. The yarn is here drawn out to a greater degree of fineness, with the requisite twist upon it, according as it is wanted for weft or warp.

We now enter the Power-loom Rooms, where the warp, having been

GRACE STREET MILLS, THE PROPERTY OF MESSRS. D. AND J. COOPER.

wound on to a beam, is fixed in the loom. Here the perpetual clatter, shriek, whizz, of the many looms and rapidly-traversing shuttles is such, that the visitor instinctively pauses on the threshold, to consider whether *it would* be safe to intrust his astonished ears to such a chaos of wild *sounds;* reassured, however, he ventures down the room, and finds that

THE PREMISES OF MESSRS. D. AND J. COOPER, IN WELLINGTON STREET, LEEDS.

amidst the seeming confusion of the whole, each particular part of loom, and its attendant weaver, have their appointed part to perform, and do it with a precision quite unattainable by the handicraftsman.

The cloth is now examined, and any errors in the weaving corrected, after which it is cleansed from all its impurities, burled, or freed from any foreign substance that may adhere to it, and then handed over to the cloth-miller, to be milled or fulled—an operation that is highly interesting in itself, and should be seen to be properly understood.

The cloth is now said to be in the balk, and is taken to the dressing or finishing mill, also the property of the Messrs. Cooper, situated in Grace-street and Park-lane, where it is raised on what is called a gig, a heavy and strongly-formed machine, with a large cylinder, across which are placed, close to each other, iron rods, closely set with teazles: these are in appearance and size something like the cones of the common Scotch fir, but covered with hard, finely-pointed and elastic prickles. The cloth is rapidly drawn by the revolving cylinder for a length of time over this prickly surface, and comes off with a kind of nap or draw upon it, the fibres being all laid in one direction, to give it an even face; however, it is generally cross-raised by hand, again passing the gig, then dried, and the long rough draw cut partly off by the spiral cutter, or Lewis machine, after which it is pressed, then wound upon rollers, and boiled for six or eight hours at a time for several days together, at a high temperature; and after undergoing sundry other processes, such as dyeing (if not already dyed in the wool), tentering, dry-beating, brushing, and re-cutting, it is finally pressed, and sent into the warehouse ready for the wearer.

In the Great Exhibition of 1851, Mr. John Cooper, J.P., was one of the jurors in this department, in which he is more immediately interested, and the firm was consequently disqualified from receiving the prizes which might otherwise have fallen to their lot.

The handsome warehouses in Wellington-street were erected in 1857, and rank among the best and most commodious of the commercial buildings in Leeds.

The Airedale Foundry of Messrs. Kitson and Hewitson.

The Airedale Foundry of Messrs. Kitson and Hewitson is one of the greatest manufactories for the construction of locomotives in the king-

THE FITTING SHOP, AIREDALE FOUNDRY, THE PROPERTY OF MESSRS. KITSON AND HEWITSON.

dom, in which no less than 1,000 hands find constant employment. The premises contain five steam-engines, of the collective power of 120 horses, by which upwards of 200 machines for boring, planing, drilling, screwing, punching, shearing, polishing, &c. &c., are kept in motion.

The premises are very extensive, nearly four acres of ground being covered by them. The Midland Railway have run a branch line into the centre of the works, a necessary accommodation for the proprietors. The fitting-room, shown in our engraving, is the most extensive of the kind in the kingdom. The departments appropriated to the manufacture of models occupy no less than three flats, or floors, of the premises. Due regard has ever been paid by the gentlemen composing the firm to the welfare of the 1,000 people in their employment; Mr. Hewitson having specially devoted his attention to the establishment in the works of a self-supporting *Sick Visiting Society*, which, with untiring industry, he continues to superintend, though the entire management as regards the working of the institution is left to a committee of five, two foremen and three working men. The rules are sixteen in number; three of them we print in full.

X. When a member's claim has been allowed by the committee, he will receive a sum equal to half his regular wages, to be paid weekly, either by the cashier or visiting steward, as most convenient; and in case of long-continued sickness, the payment at the rate of half time will not be allowed for a longer period than twenty-five weeks, when, if necessary, one-half of this sum, or quarter time, will be paid for a further period of twenty-five weeks, when all claim to assistance from the society shall cease.

XIV. To meet the current expenses of providing assistance to those members requiring it, all the hands employed by Messrs. Kitson, Thompson, and Hewitson, and receiving weekly wages, shall work ten minutes per day over and above regular time, such ten minutes, amounting to one hour per week, to be deducted from their wages and placed to the credit of an account to be opened with the Sick Society. All fines and forfeits to be paid over to the same account.

XV. As it is not intended that the funds of the society should accumulate, but that they should merely meet current expenses, the committee are empowered (should the balance of the funds, as shown by the cashier's quarterly statement, require it), either to recommend a reduction, temporary suspension, or increase of the overtime of one hour worked by each member, for the support of the society, such recommendations to be presented, in writing, to Messrs. Kitson, Thompson, and Hewitson, who will order the necessary alteration in the time of ringing the bell.

This beneficent society, creditable to the head and heart of its humane *projector, has* been nearly four years in operation, and we are delighted

to be able, after careful inquiries, to state that its working is entirel satisfactory both to the masters and men. The main features of th scheme are quite novel, and we doubt not but that the idea will b taken up by other large firms throughout the country. [We hope t enlarge our notice of these Works in the next Edition.]

Messrs. Wilkinson and Co., Flax-Spinners.

The Flax Mills of Messrs. Wilkinson and Co. are situated in th parish of Hunslet, on the banks of the Aire, and have a river frontag of 450 feet in extent. The position of the manufactory is one pecu liarly well adapted for this business.

On entering the quadrangle, the visitor will be astonished at th enormous pile of buildings around him, but the business is of suc extent that every available inch of ground is turned to advantag occupying at least eight acres. Upwards of 1,600 persons are em ployed on these Works, and when we mention that 2,600 tons of fla are annually used, and 1,040 tons of tow, the reader will be enabled t form a judgment of the operations carried on here.

A brief outline of the chief features of the flax manufactory may b interesting to our readers.

The flax is brought from the flax-farmers in the form of small bundle called "heads," measuring probably two or more feet in length, an weighing a few pounds each.

They are first cut or broken in two or more places, so as to divid each fibre into three or more portions, which are of different qualitie the middle one being the best. There are distinctive names applied t flax of different colours: thus the "blue" is the dark-coloured, and th "white" is the light-coloured portion.

Then ensues a chain of processes, so continuous and so remarkabl that it may be deemed the most characteristic part of flax-dressing this is the *heckling*, a process which separates, straightens, cleanses, an splits the fibres. In the language of the flax-mills, the flax ceases t be called by that name after it has passed through the hecklin machines; the good portion is then called "*line*," and the inferior "*tow*. Both of these are afterwards spun into yarn, but the yarn so produce has different degrees of excellence.

We have next to follow the heckled flax or line to the rooms where

is further prepared for spinning. From the heckling-room the flax is carried to the sorting-room, where there are a number of men provided with boxes divided into numerous compartments. The heckled flax being laid out on a bench or table, the sorters examine it by small portions at a time, and separate it into many different qualities, according to the fineness and fitness for different kinds of yarn. This is an operation requiring much of that discrimination of touch which is observable in wool-sorting.

The line, so far from being in one continuous band or "sliver," is yet only in the form of distinct fibres, and the process which it next undergoes has for its object the combining of these fibres into the continuous band just alluded to. This is analogous to processes exhibited in the cotton and woollen manufactures, so far as the main features are concerned. The flax, after being laid on a travelling apron, is conveyed by heckle-teeth to a series of small rollers, which "draw" it out into a continuous sliver or riband. Over and over again is this process repeated, the continuous sheet or band of line being doubled or redoubled, and drawn again after each doubling, until it presents an uniform width and thickness in every part. At one time it is exhibited in the form of a band from three to four inches in width, and this by subsequent "drawing" or extension is diminished to a beautifully smooth and glossy band an inch in width. All the slivers or extended bands fall into tall cylindrical cans, and are from thence conveyed to other machines, where a similar process is conducted, until at length the most perfect equality of width and thickness is obtained in every part: for unless this equality be produced, no after-process can prevent the yarn from being irregular.

We must here speak of the *tow* which results from the preparatory processes, and of which mention has not yet been made. When the flax is fitted into the clasps and adjusted to the heckling-machines, the heckling-teeth not only comb out the fibres straight and parallel, but also remove irregular, short, or defective fibres, as well as dust and dirt. The dirt falls to the bottom of the machine, and is thence removed; but the short fibres, or *tow*, are, by means of an apparatus attached to the machine, removed from the teeth. The tow is then sorted, and afterwards removed to the carding engines, which cleanse and arrange the fibres, *and form it into* a continuous "sliver," similar to that already noticed.

THE FLAX-SPINNING MILLS OF MESSRS. WILKINSON AND CO., LEEDS.

When the slivers, whether of *line* or of *tow*, have been brought to the desired breadth, thickness, and equality, they are carried to the "roving machines," where they are transformed to a state of soft small, cylindrical cord. There are two combined movements whereby this is effected: the sliver is drawn out or elongated, and it has a slight twist imparted to it as a means of enabling it to cohere and to bear the subsequent action of the spinning-machines.

These spinning-machines we have next to notice. They are on the "bobbin-and-fly" principle; "mule-spinning" not having, we believe, been introduced into the flax manufacture. Flax, unlike cotton, silk, wool, or worsted, is mostly spun wet, as a means of obtaining a finer and smoother yarn; and within the last few years the use of warm water instead of cold, has been introduced for this purpose. The same flax prepared in the same way, can be spun to a much higher number, or much greater degree of fineness, with hot water than cold; and this is doubtless one of the improvements to which the recent progress of the flax manufacture may be attributed. The spindles by which the yarn is spun revolve some thousands of times in a minute. The water is contained in a kind of oblong trough attached to each machine, and steam is admitted by a small pipe as a means of bringing the water to the required temperature.

When the yarn is spun, it is destined either for weaving or for thread. If for weaving, the yarn is reeled into hanks on an hexagonal reel, to be afterwards made up into bundles of twenty hanks each, containing sixty thousand yards; but if the yarn is to be made into thread, it is carried to other machines, by means of which two or more yarn-threads are twisted together, and converted into the hard and firm thread used in needlework and lace-making.

Here, then, the operations of a flax-mill terminate.

We may remark that the engines used in the manufactory of Messrs. Wilkinson and Co. are those made by Fairbairn, of Manchester.

The Sheepscar Spanish Leather and Glue Works of Messrs. Wilson, Walker, and Co.

The processes involved in the manufacture of Leather,* form a very

* "Leather appears to have been known in Egypt and Greece at a very early period. The *thongs of manufactured* hides were used for ropes, harness, &c., by all ancient nations. The

THE PREMISES OF MESSRS. WILSON, WALKER, AND CO., LEEDS.

prominent feature in the industrial operations of Leeds and neighbourhood. Almost every variety of skins are prepared, including the finest qualities of morocco; this branch of trade during the past twenty-five years has made rapid progress in Leeds, which now ranks the second town in the kingdom. In the sheep leather department, it is acknowledged to have the first place. The leather fairs are attended by the principal factors, curriers, &c., from all parts of the kingdom.

The SHEEPSCAR SPANISH LEATHER WORKS, of which Messrs. Wilson, Walker, and Co. are the proprietors, are of extraordinary magnitude and importance, covering an area of two and a half acres, and containing 95,022 square feet of flooring, or above two acres. The principal building is of brick, with stone facings, and presents a commanding appearance; it is 360 feet long, and 30 feet wide; 240 feet of this is 7 stories high, the rest 3 stories, and was built in 1857. The operations of this immense factory comprise the manufacture of Spanish or fancy-coloured leathers, principally sheep-skins, also goat and calf skins, of which the firm are capable of producing 20,000 skins weekly, including furniture roans, fancy skivers for book purposes, hat linings, &c., chamois or wash leather, and roller leather for cotton spinning. The processes involved in the fabrication of leather, although in many respects remarkable and interesting, are very little understood beyond the circle of manufacturers and dealers. It is generally known that the avocations of the tanner, the currier, the fellmonger, the tawer, the leather-dresser, all relate in some way or other to the preparation of leather; but the relation which these employments bear one to the other is not so well understood. The matter will be better appreciated by bearing in mind the object of the various processes whereby skin is converted into leather. The gelatinous portion of the skin is made to combine with chemical substances artificially applied, and by this combination, the new substance, *leather*, is produced. The ingredients employed for the conversion of skin into leather are various in different cases, and give rise to several subdivisions of employment in the leather manufacture. The classification of the different kinds of leather may

Gordian Knot was made of leather thongs, 330 B.C. The ancients understood the art of tanning leather. It was practised early in England, and great improvements made in it up to 1795. The duty on leather produced annually in England £450,000, and in Ireland about £30,003. It was abolished in both countries May 29, 1830, since which the trade has made *great progress.*"

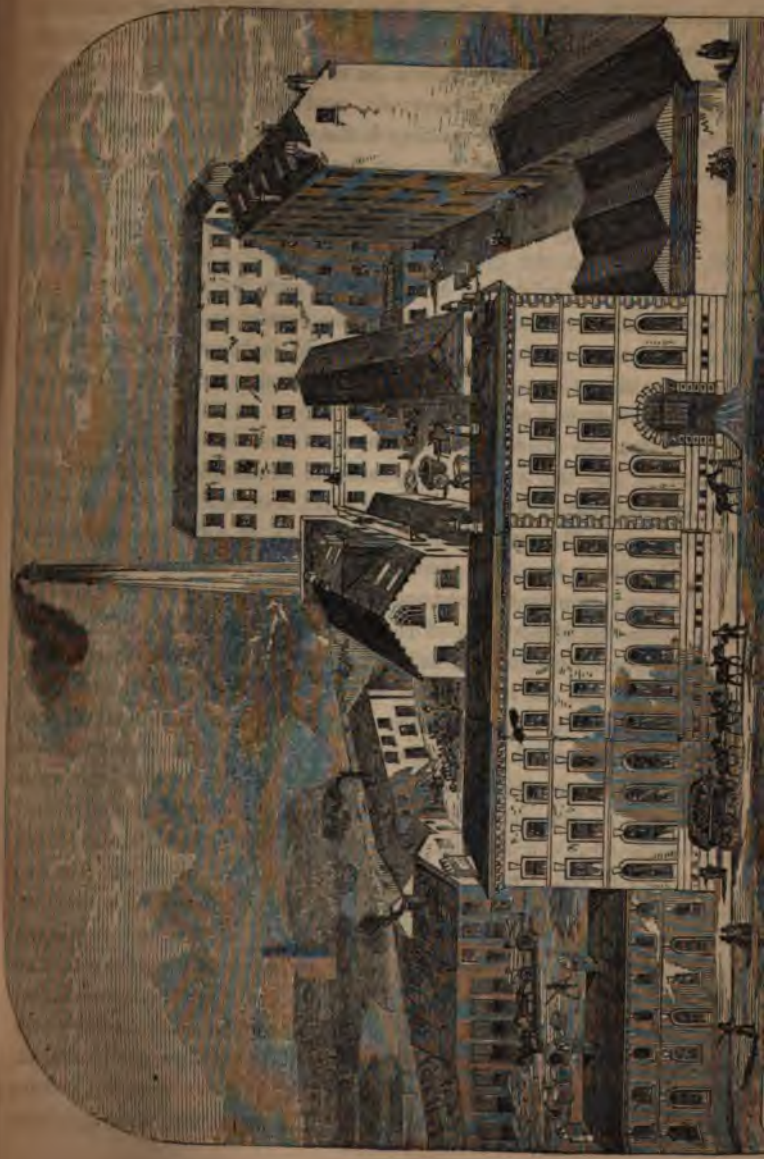
be conveniently made according to the modes of manufacturing them, whether by *oak bark*, by *sumach*, by *alum*, or by *oil;* these four varieties being remarkably distinguished one from another. The leather prepared by *tanning with oak bark* is the hide of the ox, the calf, and the horse, all of which possess sufficient firmness to be applied to the manufacture of shoes, harness, and other articles requiring great strength and durability. The skins prepared by a substance called *sumach* are principally those of the goat and the sheep; and the leather resulting from the process is *morocco leather*, for coach-linings, chair-covers, book-binding, ladies' shoes, &c.; *roan* for shoes, slippers, and common book-binding; and *skiver*, a beautiful kind of thin leather made from split sheep-skins, which are dyed into an almost endless variety of colours, and used for hat and cap linings, book-binding, portfolios, pocket-books, work-boxes, toys, and many other purposes. The skins dressed in *alum* are principally those of the kid, the sheep, the lamb, and in some instances the calf; and the leather produced is principally employed for gloves and ladies' shoes. Lastly, the skins dressed in *oil* are those of the sheep, the buck, and the doe, and the resulting leather is that of which riding-gloves and similar articles are made, as well as the soft wash-leather, or chamois leather, familiar to every one. Among the numerous interesting processes carried on here, we were particularly struck with the leather-splitting machine, which we had the pleasure of standing over during the splitting of a skin into two equal portions. Thin as a sheepskin is, and supple when wetted, it might be thought that the operation of splitting or slicing it into halves, without injury, would be an impossible task; yet this was effected with the utmost accuracy. The principle of the machine is this:—The skin is attached to a roller in a frame and drawn between the straight edge of the frame and a knife placed at the exact distance from it required for the thickness of the skin. The rotation of the roller causes the skin to be drawn slowly between them; but it cannot do so without encountering the blade of the very sharp knife, which has a reciprocating horizontal motion, in such a position as to cut the skin into two thicknesses as it passes the knife, one-half passing over, and the other under the blade. A sheep-skin of the usual size occupies about two minutes in splitting, during which time the knife makes from two to three thousand vibratory motions to and fro, cutting a minute portion of the skin at each move-

ment. At the same works, from 200 to 300 tons of glue are annually manufactured. From 360 to 400 hands are employed, and the large sum of from £17,000 to £20,000 is paid in wages during the year. The business was established thirty-six years ago, previous to which time this branch of trade was confined almost exclusively to London. A Great Exhibition Prize Medal was awarded to this celebrated firm in 1851, and again in Paris in 1855.

Messrs. William B. Holdsworth & Co., Flax Spinners, Patent Linen Thread and Shoe Thread Manufacturers.

The principal part of these works have been built by the present proprietors within the last twenty-five years; they have been enlarged from time to time as occasion required, and a supplemental manufactory added at Burley, near Leeds. The nominal power is nearly 300 horse, but they work up to double that power, and employ upwards of 1,200 workpeople. They embrace a great range of manufactures in flax and hemp, viz., Yarns and Twines, Shoe and Tailors' Threads, which are sold in nearly all parts of the world. The Works at Hunslet are confined principally to the dressing of the flax and hemp, and to the spinning of heavy yarns and shoe threads; whilst those at Burley are used for the manufacture of threads and twines and the spinning of finer descriptions of yarns. At that place also the bleaching and dyeing processes are carried on. The two establishments together occupy a large area, and the total manufactures exceed 1,500 tons per annum. The Prize Medal at the Great Exhibition in London, 1851, was awarded to this firm. The machinery in the mill of Messrs. Holdsworth and Co. is of the most valuable and efficient character.

The flax-plant has a green stem from a foot and a half to two feet high; and the flaxen fibres are derived from a kind of inner bark to this stem. It is cultivated more or less in a great number of countries, but Holland and the district around Riga are those whence we obtain our chief supply. The soil (a rich loam) being carefully prepared, the linseed (that is, the seed of the "linum," or flax-plant) is thrown on broadcast, about a hundred and seventy pounds to the acre, and slightly covered with earth by a harrow or hurdle. The surface is next rolled, trodden, or pressed flat and smooth, and in a short time the plants appear above the surface. As soon as the flax is a few inches high, the

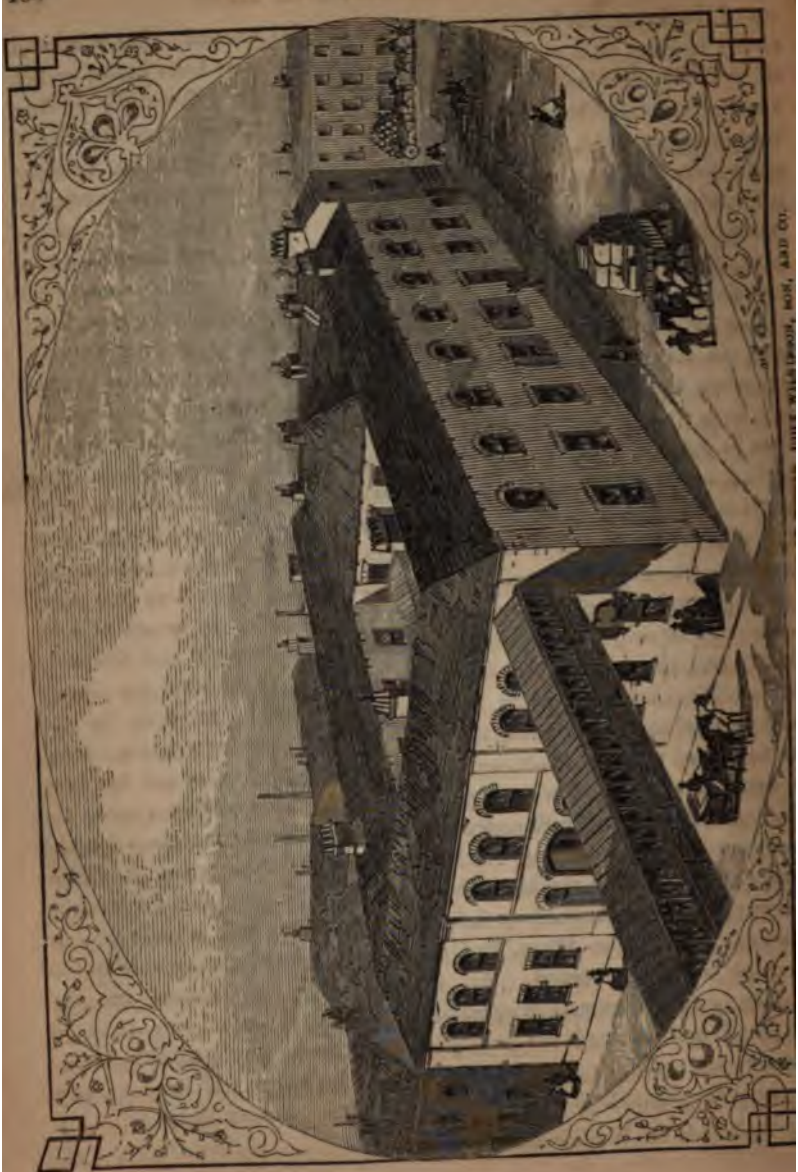


weeds are carefully taken out by women and children; and when the flax begins to get yellow at the bottom of the stem, it is ripe for pluck ing, if fine fibres for lace and cambric be required, but is too young i the seed be required to be preserved; and the cultivator therefor decides on the proper time for getting in his crop. The pulling is don carefully by small handfuls at a time, in fine weather; and the handfuls are laid upon the ground to dry, two and two, obliquely across each other. Soon after this they are collected in larger bundles, and placed with the root end on the ground, the bundles being slightly tied near the seed end, and the other end being spread open for the access of air When sufficiently dry, they are tied more firmly in the middle, and placed in long narrow stacks on the ground, eight or nine feet high and twenty or thirty long. Several of these stacks are built up in the same field, and thatched at the top.

When the flax has dried in the stacks, the seeds are severed, either for planting or for the various preparations of linseed; this is done either by beating the upper end of each plant with a kind of bat, or by drawing the plant through a sort of comb which will not admit the capsule. The plants are then, either in that or the following season, *steeped;* a very important operation, the object of which is to separate the bark from the woody part of the stem, by dissolving a glutinous matter which had caused it to adhere, and also by destroying some minute vessels which are interwoven with the longitudinal fibres, and keep them together in a kind of web. Near Courtrai, in Flanders, the steeping is effected better than anywhere else, and is thus managed:— The bundles of flax are placed alternately with the seed end of the one to the root end of the other, as many being tied together as will make a thick bundle about a foot in diameter. A strong oak frame-box, measuring about ten feet square by four deep, is filled with these bundles, set upright and closely packed. The skeleton box is then immersed in the river Lys, boards loaded with stones being placed upon the flax till the whole is sunk a little under the surface of the water. The bottom does not reach the ground, so that the water flows over and under it. There are posts driven into the river to keep the box in its place, and each flax-steeper (for this is a separate trade at Courtrai) has a certain space of river-bank to himself. As soon as the *fibres are found* to separate readily from the wood, the flax is taken

out of the water, the bundles untied, and the flax *grassed;* that is, spread evenly in rows on a plot of smooth grass which has been mown or fed off. It remains spread out upon the grass for a fortnight in fine weather, till the woody part becomes brittle, and some of the finest fibres separate from it of their own accord. It is taken up, tied up when quite dry into bundles, and carried into the barn, there to remain till ready for the operation of *breaking*. This steeping or "*water-retting*" is sometimes effected in stagnant pools; and there is also a kind of retting sometimes adopted called *dew-retting*, which consists in exposing the stalks to the action of dew on the grass for a long period.

One of the earliest machine operations is that of separating the seed from the stem; *flax-seeding* machines have been invented, which separate the seeds by the careful action of rollers. Then come the *flax-breaking* machines; these have fluted or grooved rollers, between which the flax stem is made to pass, so that the woody portion becomes thoroughly broken without cutting the fibre. Next come into operation the *flax-scutching* machines, in which revolving arms or blades visit the flax with such vigorous blows that the woody fragments are nearly beaten out, and the fibres to a certain degree separated. After this the *flax-heckling* machines give the flax a thorough combing, by means of long rows of teeth or pins; the fibres are combed out straight and tolerably clean; and the *tow* or short fibres are removed, to be used for coarser yarns. The heckled flax is then in a state to be acted on by the various machines which bring it into the state of yarn for weaving; these machines are of three kinds, according as tow, long flax, or cut flax is to be acted upon. The *tow-carding* and the *tow-roving* machines serve for the coarser yarns; the *flax-spreading* and *flax-roving* machines for the finer sorts. The spinning machine follows all these; and it differs from cotton-spinning machines chiefly in having a provision for wetting the flax, either with cold or hot water; there is still a little gum or mucilage among the fibres, and this becomes more manageable in the machine when moistened. All the machines here named are the modern or factory means of operations; in old times all was done on the hand method, and the machines have been very gradually introduced; the old-fashioned scutching and heckling and carding and spinning implements are still to be met with in country districts.



Messrs. John Wilkinson, Son, and Co., Patent Felt and Printed Drugget Manufacturers.

The Felted Carpet Factory of Messrs. John Wilkinson, Son, and Co., is situated one mile south-east of Leeds, in the county of York, and is now (1861) the largest of its kind. The senior of this firm is the founder of the manufacture, which he commenced in 1838, but it was not until 1840 that its utility was established.

The manufacture of Felted Cloth was at first asserted to be the invention of an American, of the name of Henry Augustus Wells, who came over to this country early in 1838, and placed his pretensions before the late Mr. John Duncan, solicitor, of London, who immediately patented the invention.

The next movement was to seek out a suitable manufacturer to adopt the manufacture, by erecting machinery according to the plans of Wells, and under his instructions; therefore a confidential clerk, of the name of M'Caskill, was sent to Leeds to find such a person, when accident directed him to Mr. Wilkinson's warehouse, in Woodhouse-lane, who was at that time carrying on the business of a woollen cloth merchant.

It was soon found out that Wells had not invented the manufacture, for, after erecting various machinery to accomplish his object, he signally failed in every experiment; and then came the question, how did he obtain the samples of cloth felted which had so satisfied Mr. Wilkinson, Mr. Duncan, and others, and which was a wonder to thousands?

Wells was a journeyman hatter; therefore with wool, a hatter's bow, hot water, and sulphuric acid, he again furnished similar specimens of felted cloth, about eight inches square; and this was the bait by which Mr. Wilkinson and others were taken in. Wells was therefore now sent to the rightabout, a disappointed and disgraced pretender.

In this dilemma Mr. Wilkinson, along with his overlooker and machine-makers, tried various experiments, contrary to the expressed wishes of Mr. Duncan, who became alarmed for his outlay and his shares in the patent, and therefore now applied to another supposed inventor from America, viz., Mr. T. R. Williams, who was immediately sent to Leeds on Wells's failure, when, together with Mr. Wilkinson

ARMED VIEW OF THE PATENT FIRE EXTINCTOR, THE PROPERTY OF MESSRS. JOHN WILKINSON, SON, AND CO.

and his workmen, the present mode of manufacture was invented, and accordingly patented by Mr. Williams in 1840. There have been many improvements since, but the machines are substantially the same. The above firm now manufacture, in addition to PRINTED CARPETS and DRUGGETS, ANIMAL RUGS, HEARTH RUGS, &c. &c.; NUMNAHS, or CAVALRY BLANKETS, GUN WADDING, SADDLE CLOTHS, SHIPS' SHEATHING, and CATTLE-HAIR FELT for BOILERS, &c. &c.

The manufacture of these consumes annually 1,600,000 lbs. of wool, or 129 packs of wool weekly. This manufactory produces 1,600,000 square yards of printed carpeting alone annually. The manufactory covers an area of 15,745 square yards, or over three acres of land.

The reader will be enabled to form a judgment of the great extent of these manufacturing premises from the two engravings we have annexed. We may add, in conclusion, that the patterns are designed on the premises by a first-class designer and his assistants, and all the Blocks for printing are cut and executed on the premises also.

The Colour Mixing Department, and Block Stores, are very extensive.

Branch Establishments: London, Paris, and Manchester.

THE HOPE FOUNDRY OF MESSRS. LAWSON AND SONS, MACHINISTS, ETC.

These enormous premises are situated at Mabgate, and for extent, and the importance of the manufactures, may be ranked amongst the foremost of their character in Great Britain, and we may, without exaggeration, add, the world.

Upwards of six hundred men are employed at these Works; and amongst the careful arrangements made for their efficiency and good *drill*, we may remark that a Rifle Corps has been formed among them, of which Mr. J. H. Lawson is Captain, and Mr. Lister Lieutenant. Good volunteer training cannot but make excellent workmen; obedience, punctuality, and physical exercise being alike useful to soldier and mechanic.

We request our readers to avail themselves of the following notes

respecting the Hope Foundry, and taken during a recent visit to the Works.

On entering we perceive a spacious shed, which has recently been erected to receive heavy tools, and having at the end a large brass foundry. Here will be seen eight smelting-furnaces, and a large furnace devoted to the heating of iron rods.

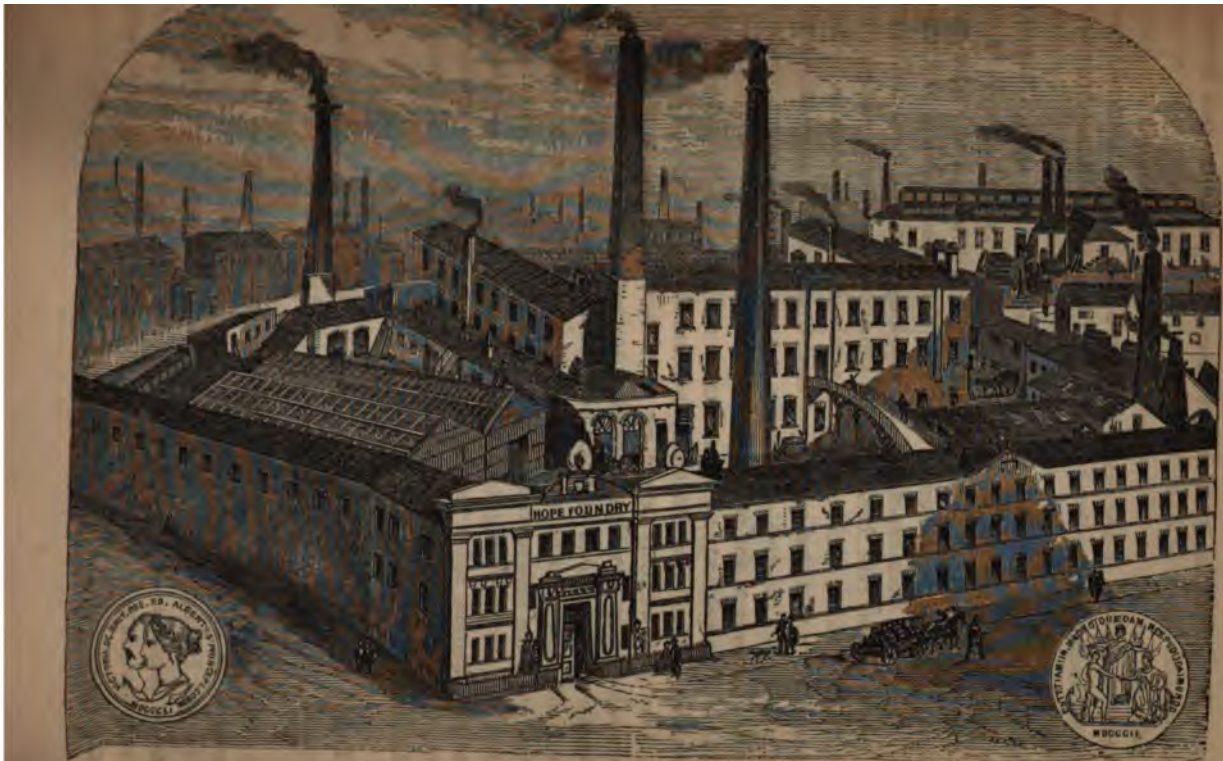
An enormous quantity of iron is made at these colossal Works, owing to the increased consumption of that metal in the arts and manufactures, and especially by the introduction of the modern system of railways; also to the improved machinery and apparatus employed, and to the vast and almost inexhaustible supplies of coal and iron which our mineral-fields contain. There is no country in the world, except the United States, which can compare at all with Great Britain in the possession of the two great elements of all modern progress,—coal and iron.

Iron Founding, as our readers are doubtless aware, is practised either in casting any quantity of metal in the solid, or with a core (by means of which the metal is preserved of a determined thickness or substance), or in plain casting. Before any article can be cast in metal it is necessary that a *model* of it should be prepared, and upon this the *mould* is made. When everything is ready, and the metal is in a fit state for running, the orifice or mouth of the furnace is opened, when the metal descends, and the mould is filled. The metal is allowed to run till it overflows the mouths of the channels into the moulds. The work is then left to cool, after which the mould is scraped or knocked off, and the cast undergoes the necessary processes (such as cleaning, chasing, &c.) to render it fit for the purpose designed.

Messrs. Samuel Lawson and Sons have recently erected a new Foundry, 160 feet in length, and 50 in breadth, one of the largest and best-constructed buildings of the kind in Leeds.

The premises are very eligibly situated for manufacturing purposes; the canal known as Sheepscar Beck passing through them, affording water facilities to great advantage.

Messrs. Samuel Lawson and Sons are large manufacturers of FLAX, TOW and CARDING MACHINERY; HEMP-SPINNING MACHINES, SPREADERS, DRAWING and ROVERS. From the department in which *these are made*, we cross a bridge, and enter the SPINNING-FRAME



THE HOPE FOUNDRY, THE PROPERTY OF MESSRS. LAWSON AND SONS, LEEDS.

Room. The expedition with which these machines are made is marvellous, several dozens of them, by a division of labour, being made at one time.

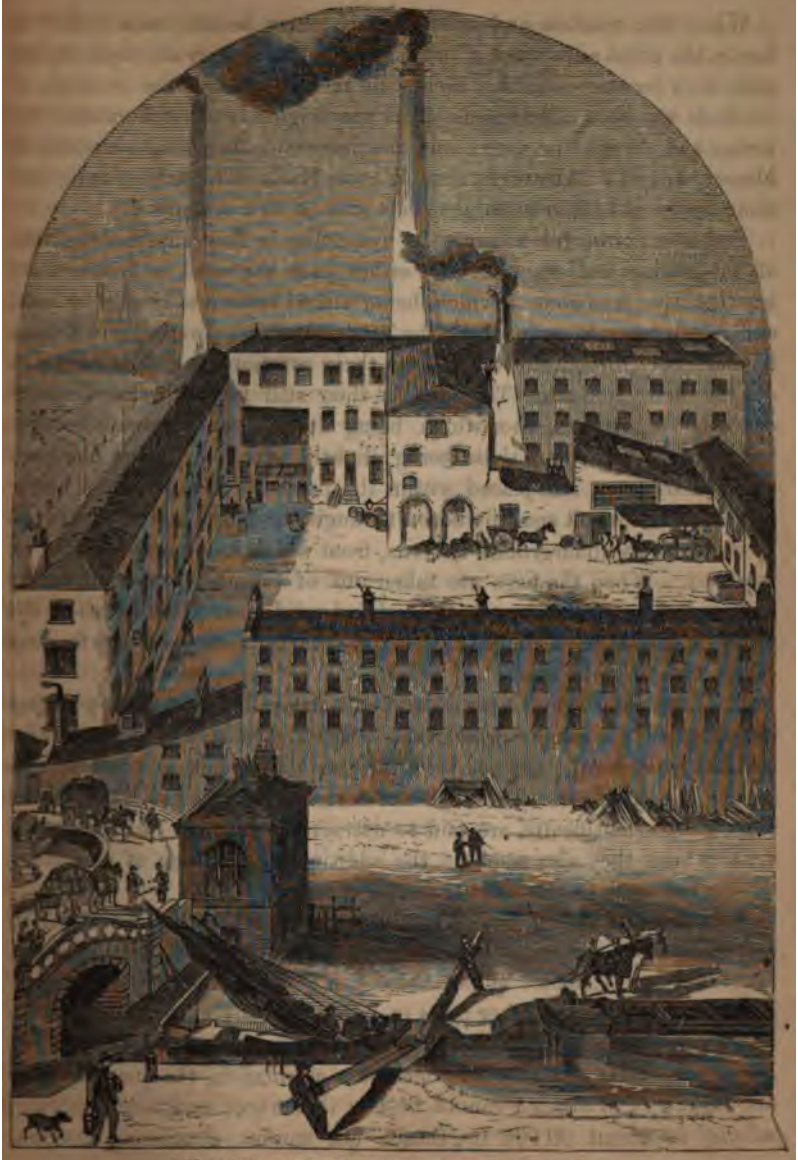
We visited one of the several Fitting-Shops, and remarked, with astonishment, the wonderful operations of the Circular Saw, which cuts a bar of iron as easily as we chip wood. The advantage of this instrument is that it cuts more smoothly, and with a less loss of force than the reciprocating saw, from having no backward stroke. In the Wheel-Cutting Room the processes are very interesting, and more important than people generally imagine. The configuration of the teeth of wheels has been repeatedly examined by scientific men, including Camus, in the year 1782, who was the first to lay down principles for the same, which Buchanan subsequently applied to practice. This question is not of that importance now, from the small size of the teeth of wheels, and the greater accuracy of workmanship, in consequence of the use of iron at the present time.

The Screw-Making Department will not fail to interest the visitor. In one room alone may be counted thirty screw lathes.

Our space will only permit us to enumerate a small portion of the manufacturing operations carried on at these enormous Works. The visitor will be able to supply this deficiency, and to pass a few hours very profitably and agreeably in seeing every department of the manufactory. We believe we are correct in adding that Messrs. Lawson and Sons are always willing to give the most courteous and ready attention to all inquirers, and a visit to the Hope Foundry will be among the most pleasant reminiscences of those who have profited by their stay at Leeds.

The Water Hall Seed-Crushing and Oil Mills, the Property of Messrs. J. and J. Armistead.

Of the numerous branches of industry carried on in Leeds, the extraction of oil from linseed and rape-seed forms a very extensive trade. Indeed, the expression of oils must be considered one of its most important manufactures, not only from its extent, but for the very obvious reason that hardly any other trade (especially the scouring *of woollen cloths*) can be carried on without oil.



THE PREMISES OF MESSRS J. AND J. ARMISTEAD, LEEDS.

When the woollen and other manufactures became established in Leeds, the great advantage, if not the absolute necessity of oil-producing mills soon became evident. Hence, at an early period, the crushing of oil seeds was here introduced. This was originally effected entirely by wedge and stamper pressure, and the incessant ding-dong stampers of Messrs. J. and J. Armistead, of Water Hall Mills, have rung out their merry and often midnight peals well on to a century.

The more powerful pressure by hydraulics is now superseding that of the wedge and stamper. In either case the seed is first bruised between two iron rollers, which, being placed horizontally side by side, sufficiently near to each other, the seed, passing between them from a hopper above, becomes crushed from their rotation, and falls in flakes on the floor beneath. The seed is then still further ground under ordinary edge-stones, after which, being first heated in steam kettles, it is put in bags, and these being slightly flattened by the hand are enclosed in cases, and placed within the presses. The pressure being now applied, the oil speedily oozes through the bags, and is conveyed by channels to underground cisterns, from which it is pumped away as required. When the bags are taken out of the press, the seed, being deprived of its oil, has become a hard and solid mass. This is called *Oil Cake*, and is always in great demand—the linseed cake for feeding cattle, and the rape chiefly for manure.

The increasing demand for oil and cake has called for a corresponding increase in the means of production. Messrs. Armistead have gradually introduced hydraulic presses into their establishment in place of the wedge and stamper. These powerful machines, besides doing their work more scientifically, are said to extract the oil more fully from the seed, whilst they also combine the additional advantage of executing double the work in the same time and space.

To give some idea of the extent of the present production of oil in Leeds, and of the capital engaged in this branch of manufacture, according to the *Report of the Exhibition of Local Industry*, "Messrs. Armistead's, with the other mills in Leeds, employ equal to 37 double hydraulic, or 74 of the old wedge and stamper presses. These turn out literally a 'river of oil.' On a moderate calculation, the quantity they are capable of producing cannot be less than three and a half million *gallons, or about* 60,000 hogsheads per annum, consuming 200,000

quarters of seed, or above one and a half million bushels per annum. But as it is the almost invariable custom of oil mills by a change of hands to run day and night, when at full work they will crush 400,000 quarters, or three million bushels of seed, producing in round numbers seven millions of gallons, or 120,000 hogsheads of oil per annum, besides 50 to 60,000 tons of oil cake. The whole of this, at average prices, may be said to employ annually a capital exceeding two millions sterling."

The oil and cake manufactured by Messrs. J. and J. Armistead are of superior quality, and have deservedly gained them a reputation far and wide. Their linseed cake especially has long been much esteemed for its good feeding quality, so that it is impossible to supply the demand. Their rape oil, used for manufacturing purposes, they also refine very extensively, purifying it by the best chemical method, thoroughly freeing it from all its glutinous and carboniferous properties, rendering it admirably adapted for lubricating purposes, so that it is admitted to be the most brilliant and economical oil for burning.

Upon the same premises, Messrs. J. and J. Armistead carry on very largely the manufacture of mustard. In this branch of their trade they are the oldest house in the kingdom, being established in it since 1748. Small though an article of consumption, as mustard may appear to many, a considerable number of hands and amount of machinery are constantly employed in its preparation.

Mustard seed is extensively grown in Yorkshire, and by a careful selection of the finest samples, combined with long practical experience in drying and other parts of the manufacture, Messrs. Armistead succeed admirably in retaining the full strength and flavour of the seed, and hence their mustard has acquired great celebrity. Mr. Stephen Macadam, of the Edinburgh Analytical Laboratory, and the late Dr. Wilson, Professor of Technology, Edinburgh, have both expressed unqualified approbation of the purity and excellence of *Armistead's Genuine Brown Mustard.*" This, and their other qualities, are unrivalled, and being packed in barrels, kegs, canisters, and bottles, are not only extensively used for home consumption, but are largely exported to the United States and other foreign parts.

Mr. Richard Nickols, Tanner, Leather-Dresser, and Fell-Monger.

The extensive Tanning establishment called "Joppa," belonging to Mr. Richard Nickols, is situated in Kirkstall-road, and extends from thence to the banks of the river Aire, covering an area of about four acres.

Some idea of the extent of the premises may be formed when we mention that the drying-sheds alone cover an area of 30,000 square feet, and are calculated to accommodate 15,000 hides and skins in process of drying at one time.

The whole of the pits, which are entirely of stone, are under cover so that the severest weather fails to affect or retard operations. These pits are generally seven feet square, and six feet in depth, the upper edge being level with the ground.

There are twelve Fulling Stocks, used for the purpose of softening foreign dry hides. There is also a Rolling Machine, for giving the leather a smooth and dense texture, and several Splitting Machines, for reducing the substance of sheep and other skins and hides by splitting them into two parts, all of which are worked by a steam-engine of 30 horse power. Nearly 250 men are constantly employed, and many thousand hides and skins are tanned weekly at these Works, consisting of native produce, and hides imported from Northern Europe, South America, the East Indies, and Africa.

Two sides of the large quadrangle forming the "Joppa" are occupied by the drying-sheds, warehouses, and offices, all spacious and convenient rooms.

At Bramley Hill-Top, three miles distant, another large tanyard belonging to the same proprietor, is occupied entirely in tanning heavy hides for sales and other purposes.

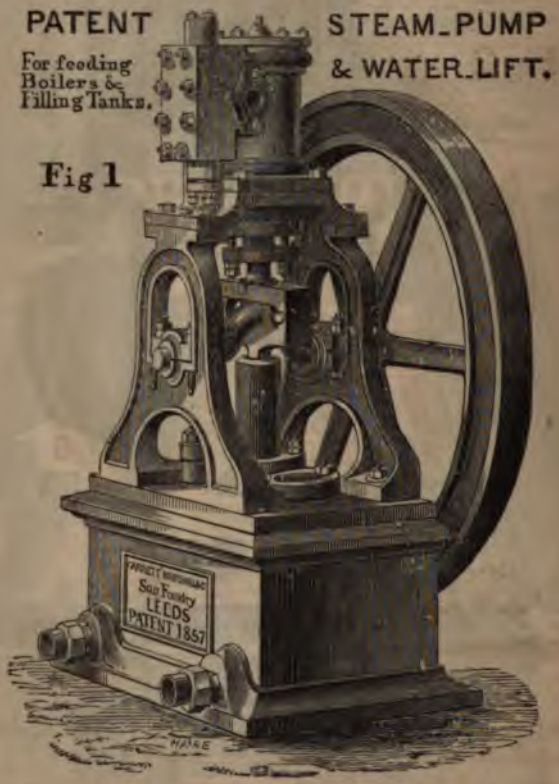
The processes carried on at these premises are very interesting, constituting an important branch of our national manufactures.

THE JOPPA WORKS, THE PROPERTY OF MR. R. NICHOLS, LEEDS.

MESSRS. CARRETT, MARSHALL, AND CO.,

are names well known wherever English arts and manufactures have been introduced.

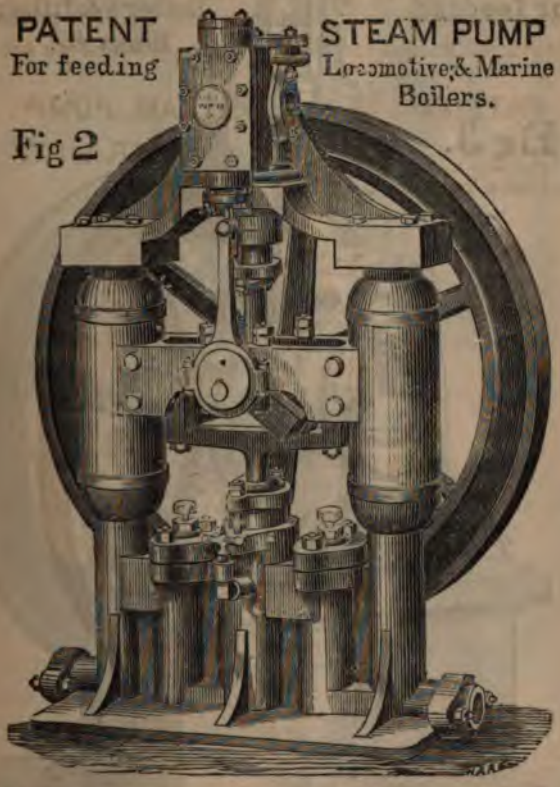
Besides the ordinary branches of engine and boiler-making, iron-founding, &c., Messrs. Carrett, Marshall and Co. are celebrated for their Patent Steam Pumps and Water Lifts, of which we are enabled



to present to our readers illustrations. These are all of the plunger construction, and adapted for forcing the water to any distance or *height, besides* raising it by suction, which is limited in practice to 29

feet deep, or what is equivalent to the usual pressure of the atmo sphere.

These simple and compact machines are entirely portable and com plete in themselves, being, in fact, a combined engine and improve pump in one apparatus. Fig. 1 is the form mostly used for feedin



boilers. Fig. 2 is more especially designed for supplying locomotive and marine boilers, being lighter and more compact.

Fig. 3 is also used for the former purpose, but is further applied to raise and force water to supply railway tanks, reservoirs, &c., and forms at the same time a complete steam-engine, which can be detached from the pumps, and used as a motive power for actuating machinery.

The various sizes of these steam-pumps and water-lifts are c

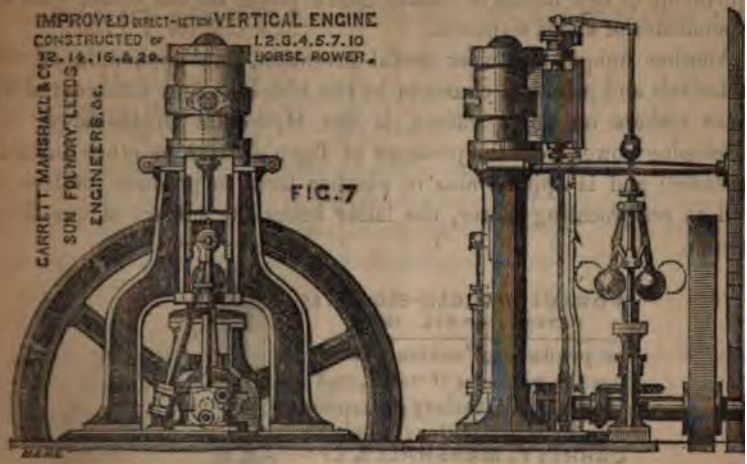
PATENT
AND
For feeding

STEAM PUMP
WATER LIFT
Boilers & filling
Tanks &c.

Fig 3.

structed to raise and force from 3,500 to 100,000 gallons, fifty to *hundred or* more feet high, in ten hours.

They are made also of the piston and bucket description, for drainag



and mining purposes, and are in operation even so large as five fe diameter of pump, raising three gallons per minute.

Messrs. C., M., and Co. are enabled to furnish a class of vertical direct-action engines constructed from 1 to 20-horse power, which is peculiar to these makers, and meets with very high commendation; and also a new arrangement of these engines upon a vertical internal fire-box and water-chambered boiler, which forms all the foundation that is necessary for engines of two, three, four, and five horse-power. Here all fixing is dispensed with, enabling the whole apparatus to be readily set to work in a few hours, and working with about five pounds of coal per horse per hour.

A more compact and effective motive power could scarcely be devised, thus bringing down the application steam-power to the requirements of every-day life, and entirely dispen

ing with the necessity of hand or horse-power, and producing a equivalent to two horses or twelve men's power for ten hours, with a expenditure of about sixpence.

Another unique and most useful invention, now applied in all th cathedrals and principal churches in the kingdom, and constructed b these makers on Joy's Patent, is the Hydraulic Organ-blower fo developing power from the pressure of Town's water, or other suitabl pressure; and is applied also in another form to produce rotative a well as reciprocating power, the latter being the subject of our illus tration.

HYDRAULIC ORGAN-BLOWER &c
PATENT, APRIL 1857.
For producing "motive power"
from the pressure of water, and
applicable to a variety of purposes
For price & particulars, apply to
CARRETT, MARSHALL & Co
ENGINEERS, LEEDS.

These are indeed valuable results of engineering and constructiv *skill, even* in these days of important inventions and discoveries. Th

more readily steam and water pressure can be applied to domestic uses, the greater will be our increase of comfort; and we hope Messrs. Carrett, Marshall and Co. will find staunch and numerous supporters in the public.

The Wine and Spirit Establishment of Messrs. Hebblethwaite, Brothers, Albion-place.

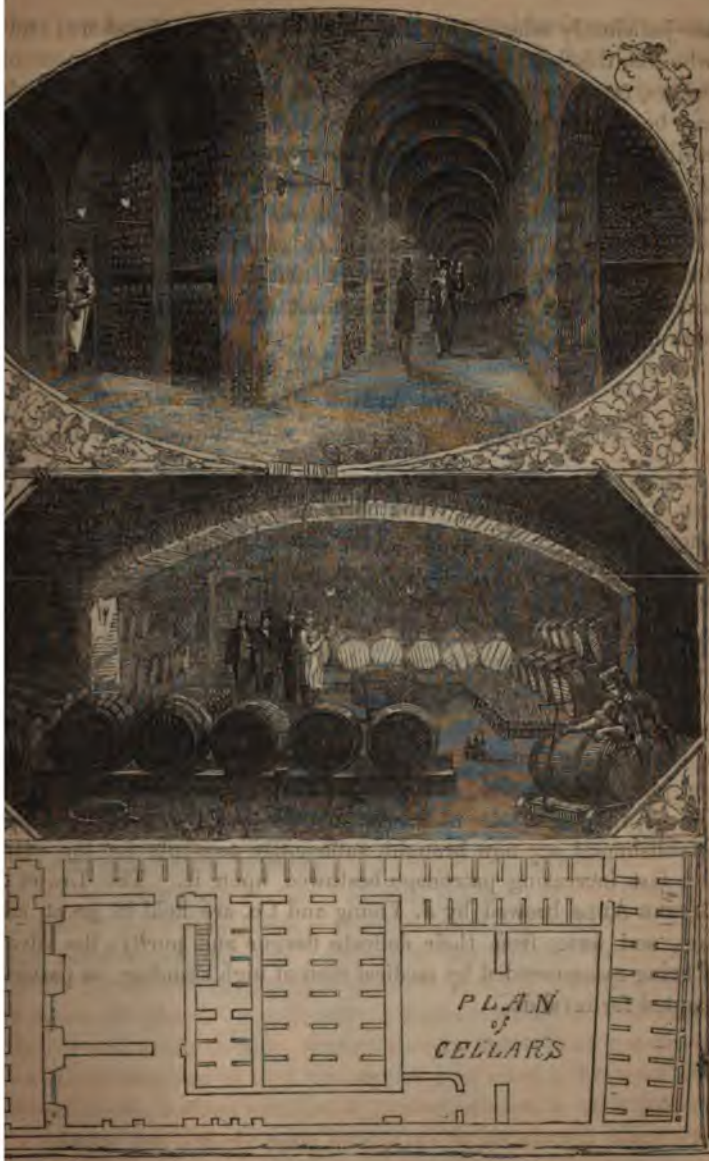
Lovers of the generous vintage—of the wine "that cheers the sad, revives the old, inspires the young, makes weariness forget his toil, and fear, her danger"—will be amply repaid by visiting, while at Leeds, the extensive stores of Messrs. Hebblethwaite, Brothers, who were formerly established at Oporto, and have, consequently, a large foreign connexion.

Perhaps in no other article of commerce there is greater need to be cautious than in the purchase of wine. Establishments for the sale of adulterated liquids misnamed wine, in which the juice of the grape enters but in a small proportion to deleterious compounds, are unfortunately numerous all over the country; and the captious advertisements of some of these companies lead the unwary to become spendthrifts in money and in health; for the worst part of the matter is, that fraudulent wines, concocted for *cheap sale* of noxious ingredients, debilitate the system and lay the seeds for disease of every kind. It is, therefore, of paramount importance that the purchaser should choose for his wine merchants men of sterling integrity, and to whom character is everything. To Messrs. Hebblethwaite, Brothers, we can safely recommend our readers, as wine merchants of the highest credit in the commercial world. While in the cautionary vein, we would also strongly advise the purchaser to select the *best quality* of wines, as the cheapest in the end. Messrs. Hebblethwaite, Brothers, are enabled by their large mercantile connexions, and the experience of many years in the home and foreign markets, to obtain really genuine and delicious wines at the lowest price at which they can be obtained, and they are always ready to give their customers the advantage of any reduction in prices which circumstances may occasionally permit. Wine, that was until recently an expensive luxury, may be had now at very moderate charges, and the community at large may profit by what was once the almost exclusive enjoyment of the wealthy; witness, for instance, the reduction in clarets, which was

at one time a staple beverage of the British public, and may, and probably will, become almost as popular. Every day increases our knowledge of wine and the chemical agencies which act so powerfully upon it.

On visiting the extensive cellars of Messrs. Hebblethwaite, Brothers, the stranger will gather much information of a useful character with regard to wines. The bouquet of some, in particular, will delight him. This bouquet, which gives such an exquisite sensation to the wine-drinker, depends upon the proportion which the wine contains of *œnanthic* ether, which has a sharp disagreeable taste, and has so powerful an odour of wine as to be almost intoxicating. It does not exist in the juice of the grape, but is produced during the fermentation, and increases in quantity by keeping, as the odour of old wines is stronger than that of new wines. So powerful is the odour of this substance, however, that few wines contain more than one forty-thousandth part of their bulk of it; yet it is always present, and is one of the general characteristics of all grape wines.

The visitor will remark with astonishment the large quantity of wine collected at the stores of Messrs. Hebblethwaite, Brothers, in bottles, in pipes, &c. The pipe, we may observe, varies according to the description of wine. The pipe of port contains 115 gallons; of sherry, 108; of Lisbon and Bucellas, 117; of Madeira, 92; and of the hhd. claret, 46 gallons. The pipe of port, it should be observed, is seldom accurately 115 gallons, and it is not unusual to charge what the vessel actually contains. The Champagne supplied by Messrs. Hebblethwaite, Brothers, is of the choicest quality, and can be highly recommended. Here we may give those of our readers who are fond of this delicious wine another instance of popular error in the mode of drinking it. The prevalent notion is that a glass of champagne cannot be too quickly swallowed; and it is no bad test of the quality of the wine to have it exposed for some hours in a wine-glass, when, if originally of the highest order, it will be found to have lost its carbonic acid, but entirely to have retained its body and flavour, which had before been concealed by its effervescence. Champagne should, therefore, not be drunk till this active effervescence is over, by those who would relish dry, aromatic flavour and fragrancy; but as procured in the ordinary market, it is of fluctuating and anomalous quality, often destitute of *all aroma*, and tasting of little else than alcohol and water. Clarets



THE WINE AND SPIRIT CELLARS OF MESSRS. HEBBLETHWAITE, BROTHERS.

are judiciously selected by Messrs. Hebblethwaite, Brothers; and those who like the light and wholesome French wines, will find them in their cellars, remarkably pure in quality, and at the low tariff at which they can be now imported. The palate of an Englishman, however, is not easily reconciled to this simple beverage; but if a man wishes to get up in the morning with a clean tongue and a clear head, he should drink the pure Bordeaux wines of *la belle* France.

No visitor to Leeds should fail to call at Messrs. Hebblethwaite, Brothers, and to furnish his cellars with their wines, if economy and sound judgment be consulted, for most assuredly he will be a gainer both in purse and in health.

The Albion Brewery,

the Property of Messrs. John Young and Co.

Among the many branches of industry existing in Leeds, the Brewing Trade has of late years borne a prominent part. It is a well-known fact that the Burton brewers no longer enjoy the monopoly they once possessed; and it is our pleasing duty to record here that of the few favoured breweries now competing with them, none seem more likely to succeed than the Firm of Messrs. J. Young and Co., of the Albion Brewery in this town. This establishment is supplied, from a well on the premises, with water which has been pronounced, by some of the leading analytical chemists of the day, to be as efficient for brewing purposes as *any known;* and the fine quality and purity of the ales produced at this Brewery justifies the assertion. Indeed, the high state of perfection to which the productions of this establishment are now brought, sufficiently accounts for the extensive and fast increasing patronage bestowed upon it. The Light Pale Bitter Ales brewed by J. Young and Co. are held in great admiration, and have, from their delicate flavour and purity, the advantage of being recommended by medical men of high standing, as particularly adapted for invalids.

THE ALBION BREWERY, THE PROPERTY OF MESSRS. YOUNG AND CO., LEEDS.

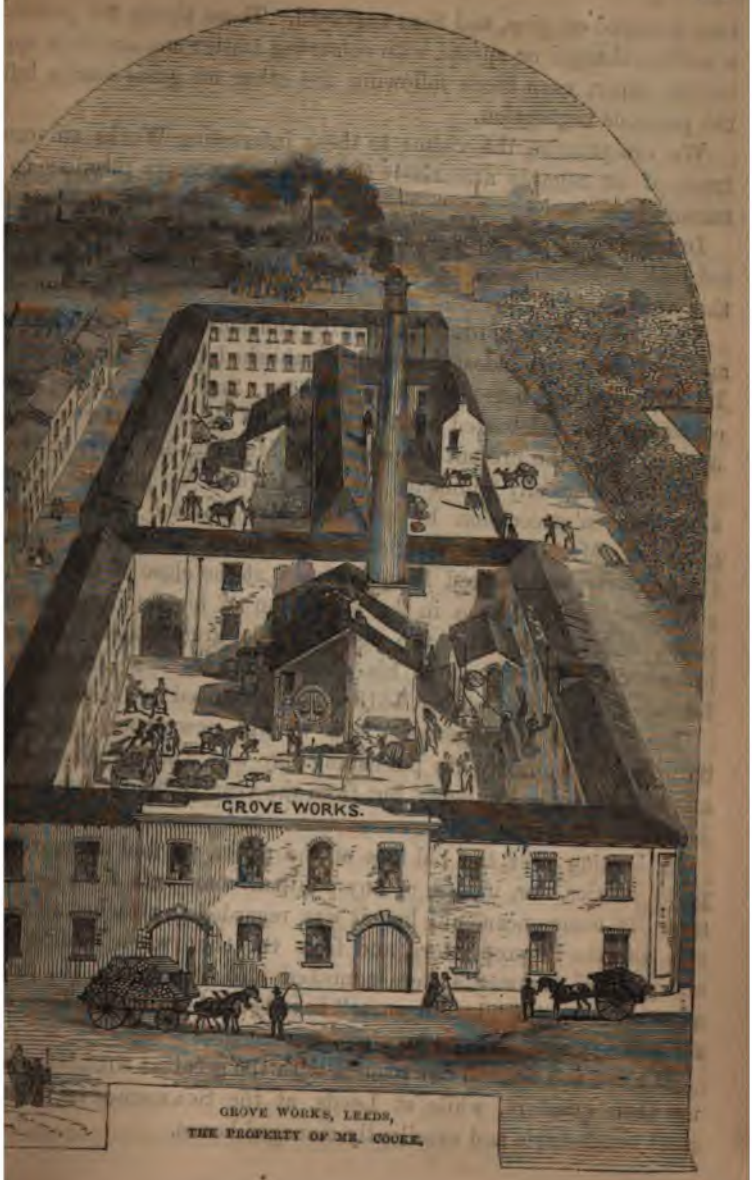
The Paper-Hanging Manufactory of Mr. William Cooke, Grove Works.

Paper-hangings, the invaluable substitute for the ancient "hangings" of tapestry or cloth, came into use about two centuries ago. The manufacture has undergone a gradual succession of improvements, and has now reached a high state of beauty and perfection. They may be divided into three kinds: the *flock*, the *metal*, and the *coloured*; and each of these seem to have been invented at a different time, as an imitation of a distinct material: the flock, to imitate the figured tapestries and stuffs, the metal in imitation of the gilt-leather hangings, and the coloured as a substitute for painted decoration. Paper-hangings form a manufacture of importance, employing many artists and operatives; consuming also vast quantities of paper, colours, wool, and metal; also, because they may be made the means of diffusing taste for art; and from their low price enabling the humblest mechanic to give to his home an air of elegance and comfort.

The Grove Paper Hanging Works are situated in Clay Pit-lane, and are very extensive; here every description of paper-hangings are manufactured, from the costliest flock, gold, and satin patterns, to the more homely and less expensive kinds. In making flock-paper the pattern is first printed in size, and then with a preparation of varnish or Japan gold-size. When this is partly dry, coloured flock, prepared from wools, is sifted on the varnish pattern, to which it adheres. Great improvements have been made of late years in this manipulation. Where gilding is introduced, the preparation is much in the same manner as for flock; the leaf metal being laid on the varnish pattern or bronze powder. English manufacturers have obtained great perfection in the preparation of *metal* papers. The gilding, having to encounter our variable climate, is severely tested; but by means of good material, careful manipulation, and a preparation washed over it, it remains unchangeable.

Our readers will see at the Grove Works, the machine-printing, introduced about twenty years ago, by which each machine is capable of printing an immense number of pieces daily. The process of manufacturing ordinary paper-hangings may be thus briefly described:—

The pattern being first carefully drawn, the outlines of the various *tints are traced* upon separate wood-blocks, made of sycamore or pear-



GROVE WORKS, LEEDS,
THE PROPERTY OF MR. COOKE.

tree mounted on pine, and then engraved. These blocks are pressed on a surface charged or spread with colouring matter and are then applied to the paper, each block following the other on guide-marks left by the previous impression.

We can promise the visitor to these interesting Works an unusual treat, if he regards attentively the various processes peculiar to this manufacture.

In concluding our notices of the commercial firms in Leeds, we must not omit to mention one of the principal representatives of the press in that town.

The LEEDS INTELLIGENCER was established more than 100 years ago, and it is the oldest newspaper published in the county of York. Its first number bears the date Tuesday, 2nd July, 1754; and its centenary was celebrated with a dinner, by all the persons employed upon it under the present proprietor, on Monday, 3rd July, 1854.

It was originally published by Mr. Griffith Wright, the elder, and after him in succession by his son, Mr. Thomas Wright, and his grandson, Mr. Griffith Wright, the younger. The latter disposed of the property, and retired from business, at the close of the year 1818, after the paper had been in the possession of his family more than 64 years, and shortly after the death of his grandfather, the original proprietor, who expired at his pleasant residence at Harehills, near Leeds, on the 27th October, 1818, at the advanced age of 86.

The "Leeds Intelligencer" is a weekly newspaper, published on Saturday. Originally its publishing day was Tuesday, then Monday, and subsequently Thursday, but from the year 1833 its publishing day has been Saturday.

In looking over the old files of the paper, we find no expression of party politics, nor, indeed, of any political comments, for a long period after its commencement; but it was regarded as attached to the Tory side, as were its proprietors, and from the time when leading articles and political comments were admitted into its columns, the principles advocated by the "Intelligencer" have been those of the Tory or Conservative party.

We can recommend our readers with the greatest confidence to take up their quarters, while at Leeds, at the SCARBOROUGH HOTEL,—a *most comfort*able and excellently managed house.

The premises of Mr. John Wales Smith, the extensive woollen-draper, &c., in Commercial-street, are worthy a visit. This is one of the most respectable establishments in Leeds. The amount of business done by the proprietor in the several departments into which it is divided, is very large; nor are we surprised that such should be the case when we consider the high reputation he enjoys, and the perfect means and appliances at his disposal.

Mr. John Edward Smith, the son of Mr. John Wales Smith, occupies the honourable position of Town Clerk of Leeds.

Nine miles south of Leeds we reach Wakefield, one of the most handsome towns in the West Riding of Yorkshire, situated about half a mile from the two Railway Stations. The discovery of many coins and other relics of the Romans, in the neighbourhood, indicates its existence in the time of that people. In the reign of Edward the Confessor, it formed part of the royal demesne, and was subsequently transferred to the Conqueror: in "Doomsday Book," it is denominated *Wachefeld*. This was the scene of the famous battle at the close of the year 1459, between Richard Duke of York, and Margaret of Anjou, queen of Henry VI., in which the former lost his life. A gold ring, belonging to this prince, was found here some years ago. Leland, about 1536, describes Wakefield as "a very quick market-towne, and neately large; well served of flesch and fisch, both from the se and by rivers, whereof divers be thereabout at hande, so that al vitaile is very gode and chepe there. A right honest man shal fare well for two pens a meale." The manor, or lordship, was purchased in 1700 by the Duke of Leeds, to whose descendant it still belongs. Wakefield is principally situated upon the side of an eminence, sloping to the river Calder, in the midst of a fertile and picturesque country, and consists of spacious and regular streets, with many well-built and handsome brick houses. It is the county town of the West Riding of Yorkshire, and is a modern Parliamentary borough, returning one member.

The parochial Church is a spacious Gothic structure, erected in the reign of Henry III.; but from the various changes it has undergone, little of the original edifice remains. It consists of a nave, separated from the aisles by two rows of clustered columns supporting pointed arches, and from the chancel by a lofty screen. The square tower is

adorned with battlements and pinnacles, and surmounted by an octagonal spire, the height of both being about 237 feet. There is a very beautiful and richly adorned Gothic chapel on the bridge over the Calder, built, it is stated, by Edward IV., in memory of his father and followers who fell in the battle before mentioned; it is right to add that doubts have been thrown on this assertion, but the opinion of eminent antiquarians are in favour of this date. This interesting structure, after having been used as an office and lumber-room, was restored a few years ago, by a patriotic individual, and is now used for Wednesday evening lectures and service, as a Chapel of Ease to the church. Leland, in his "Itinerary," notices the fair bridge of stone over the Calder, and "on the est side of the bridge is a right goodly chapel of Our Ladye." This bridge has eight arches, and was built in the reign of Edward III. The chapel projects over and partly rests on the starlings of the bridge. A short bridge across a little stream at the west end of the town, goes by the strange name of Humble Jumble Bridge.

THE CHANTRY CHAPEL, WAKEFIELD.

Besides these buildings, and the churches of St. John and Trinity and one at Thornes, there are others for religious worship of various denominations. The *Free Grammar School* was founded in 1592, by Queen Elizabeth, and several eminent persons received their early education here: amongst them were Richard Bentley, D.D., who was born in the neighbourhood; Dr. John Potter, Archbishop of Canterbury, a distinguished author, born here in 1674; Dr. John Radcliffe, the munificent benefactor to the University of Oxford, and founder of the Radcliffe *Library*, was also a native of the town. In addition to these worthies,

who were educated at the Grammar School, Wakefield is the birthplace of Dr. Thomas Touch, a learned divine; Dr. Thomas Burton, author of "Monasticon Eboracense;" and Joseph Bingham, M.A., author of the "Antiquities of the Christian Church."

There are several well-supported *Almshouses* in this town; a *Greencoat School*, with an annual revenue of £426; a *Lunatic* and *Fever Hospital*, with many other charitable endowments. The most important buildings are, a *Register Office* for deeds, in the diocese of York, established in 1704; and the *House of Correction* for the Riding. The county meetings are held in the large hall of the *New Corn Exchange*,

THE NEW CORN EXCHANGE, WAKEFIELD.

built in 1837. The *Moot Hall*, or *Town Hall*, is at Kirkgate. The *Market Cross*, of the Doric order, was erected early in the last century. It has an open colonnade, supporting a dome, the interior of which contains a spacious room, used for public business. The *Theatre* was built by Tate Wilkinson. The *Court House* was erected in 1806. The *Wakefield Proprietary School* is a fine building. There are several literary and scientific institutions and societies in the town.

In the neighbourhood of the town are several interesting places and handsome residences. On the Horbury road is *Thornes House*. Beyond the river, to the south-east of Wakefield, is *Heselden House*, as old as the time of Henry VI. *Stanley Hall*, down the Calder, is the spot where Robin Hood was thrashed by the Pindar of Wakefield. Near Normanton, where the railways meet, is *Haw Hall*, an ancient building. At *Nostell Priory* are the remains of a religious house. Sandal Magna has traces of an old castle, which belonged to the Warrens, and was dismantled in the Civil War. *Walton Hall* will be recognised with pleasure by all lovers of natural history, as the residence of Charles Waterton, the well-known traveller, who has here a menagerie, aviary, &c. *Chevet House* and *Bretton House* are substantial residences; also *Hatfield Hall*, *Heath Hall*, *Lupsett House*, &c.

THE COMMERCIAL ASPECT OF WAKEFIELD.

The commercial character of Wakefield has undergone much change. The manufacture of woollen cloth and worsted yarn was formerly carried on to a great extent, insomuch that Leland, speaking of the town, says, "it standeth now al by clothying;" but these branches of trade have gradually declined, and corn and wool are now the staple commodities. Ship-yards, rope-factories, as well as malt-houses, are established here. The manufacture of woollen stuffs is now almost entirely removed to Bradford and Halifax, but the woollen-cloth trade, though not on any large scale, and the spinning of woollen and worsted yarn, are carried on; the dyeing of woollen stuffs is a very important branch of industry. The most marked commercial feature in Wakefield, in the present day, has arisen from its situation between a vast population of consumers, and an extensive district of production, with both of which it is connected by very complete lines of canal and river navigation. By means of the Calder, small vessels of 100 tons ascend from the Humber. All grain is ground at the Stoke or Manor Mills, a most lucrative privilege to the owners. Stone and coal are quarried here.

Thomas Marriott and Sons, Wool Spinners.

This old-established house of business ranks amongst the most *respectable* firms in Yorkshire. The manufacturing operations are

THE "QUEENS" MILLS, THE PROPERTY OF MESSRS. THOMAS MARRIOTT AND SONS.

pursued on an extensive scale, upwards of five hundred persons being employed upon the premises. The buildings cover several acres of ground, and are well suited to the purposes for which they were erected.

The manufactures here consist of LAMB'S WOOL, YARN, AND KNITTED AND CARPET WORSTED.

The processes of the worsted yarn manufacture are so interesting, and probably so little known to most of our readers, that we will briefly sketch them, in order to assist the visitor in his exploring trip through these works. To commence, let us remember, that whatever may be the kind of worsted fabric about to be made—and there are many such—the wool is first brought into the state of worsted yarn, and we may now shortly describe the mode in which this is effected. The wool employed for worsted is always longer than for felted woollens, and generally coarser; and the processes which it undergoes, so far from being calculated to make the individual fibres lock into each other by the little serrations on their surfaces, are intended to facilitate the production of a fine, even, and smoothly-spun thread. Indeed, it is one object of the processes preparatory to the spinning to impair the felting property of the wool.

The wool is very carefully washed before being fitted for worsted work. The washing is effected by patent machines with soap and water, the greater part of the moisture being afterwards pressed out by rollers. The wool, after washing, is dried and oiled, and is then ready for *carding* or *combing*. *Carded* worsted is generally thicker than *combed*, and is chiefly used in the manufacture of embroidery, knitted goods, carpets, and other heavy fabrics. In *combing*, the wool is passed through several machines called "preparers," the business of these machines being to open and straighten the fibres, and thus prepare them for combing.

The *spinning* is effected by machines analogous in principle to those employed in other branches of textile manufacture. The quality of the yarn produced, and the mode of spinning it, depend of course upon the purpose to which it is to be applied. Thus, for *mousseline-de-laine* or for *cobourgs*, a fine soft worsted yarn is required; whereas for carpets and other stout goods, a stronger and thicker yarn is essential. The warp, too, of almost all kinds of goods is made from yarn rather *different* from that employed in the weft.

THE PREMISES OF MR. LOVEDAY, JEWELLER, ETC., ETC.

The value and importance of the worsted manufacture render it a subject of the deepest interest to all who watch the progress of our commercial greatness. The number of persons employed in these factories, also, proves how utterly unfounded were the fallacies of those who, in days happily bygone, prognosticated ruin to the working classes from the introduction of machinery. Experience has shown how great a boon to the workman, in the alleviation of his labour, is the assistance which art has so wonderfully contrived—as in the instance of worsted manufacture—to diminish physical suffering, and expedite the work of the factory toiler.

Among the trading firms in Wakefield we would mention the ESTABLISHMENT FOR JEWELLERY AND OBJECTS OF FINE ART of MR. LOVEDAY, who has recently erected a handsome house and shop for the reception of his extensive stock of JEWELLERY, BRONZES, ARTICLES OF VERTU, AND CONTINENTAL GOODS generally. Mr. Loveday possesses an additional quality as a vendor of choice articles, from the fact that his collection is formed from the best markets abroad, and is the result of personal selection in Paris and elsewhere—he visiting the French capital every six months for that purpose. Our engraving represents the magnificent premises of Mr. Loveday, which may be considered of its kind the finest out of London. The Show-Rooms are stocked to repletion with the most beautiful objects of modern fine art, and the visitor to Wakefield cannot pass an hour or two more agreeably than at this famous establishment.

One of the first requisites for a stranger at Wakefield is a *good* hotel and we have no difficulty in recommending THE STRATFORD ARMS HOTEL, under the proprietorship of Miss Rhodes. Omnibuses ply from this hotel to and from the railway, and every possible convenience and comfort may be insured to travellers who select the hospitable resting-place of the Stratford Arms.

The Wakefield newspaper press is worthily represented by the WAKEFIELD JOURNAL AND EXAMINER, AND WEST RIDING HERALD, which circulates through Lancashire and Yorkshire; Wakefield being the centre of the Corn and Cattle Markets, and of one of the richest mining districts in the kingdom; and the JOURNAL AND EXAMINER being the oldest and most influential newspaper published in the district, renders its columns a valuable medium for advertisers.

Eight miles west from Leeds we reach BRADFORD, one of the mos important borough towns in the West Riding of York, and containing a population of 106,203 in 1861, against 103,786 in 1851. It is seated on a small brook, which falls into the Aire, and is at present very contracted; in earlier days, when swollen by the floods from the neighbouring hills, it may have been sufficiently wide to have deserved the name of *Broadford*, from which it is supposed the present name of the town is derived. Leland mentions Bradford as a rising place in his day, that "stondith much by clothing." Comparing it with Leeds, he says that the latter, though "as large as Bradford, is not so quick as it." In 1812, the introduction into this town of certain kinds of machinery produced a spirit of insubordination among the workpeople, who, calling themselves Luddites, bound themselves by oath to destroy machines wherever they could be found, particularly those employed in the dressing of woollen cloth. In the West Riding several mills were violently entered, and the shears employed in the dressing of woollen cloth by the new system were broken and destroyed. Sixty-six persons were committed to gaol for these outrages, of whom seventeen were executed. This terrible example extinguished every vestige of Luddism in the

ST. PETER'S CHURCH, BRADFORD.

county. In 1825 occurred a strike for wages, which was protracted during ten months, at an immense expense to the trades' unions, and at a dreadful sacrifice of comfort to the operatives. Since that date the history of the trade of Bradford has been one of continued prosperity, the effect of which is visible in the modern improvements of the town, and the general healthiness and comfort of every class of its active and intelligent population. During this period *schools* have been established and are well attended. A *Mechanics' Institute*, a *Philosophical Society*, and a *Library* have also helped to spread a knowledge of those principles on which alone society can be safely based.

The town, built chiefly of stone, has streets, mostly narrow, but well paved and lighted. The public buildings are handsome, and indicative of the opulence of the inhabitants. Of late years whole streets of elegant buildings have risen up, chiefly consisting of warehouses, which are an evidence of the increasing commerce. The parish church of St. Peter was erected in the reign of Henry VI., the tower being of later date. It has no remarkable exterior attraction, and is mentioned by Rickman as being principally of the perpendicular style of architecture. Among its monuments may be mentioned a very beautiful work by Flaxman, for a gentleman of the name of Balme, in which old age is finely personified. *Christ Church* was erected in 1813, but possesses no interest in an architectural point of view. The church of *St. Mark*, Low Moor, has recently been consecrated. It consists of a nave, transepts, and chancel, with a turret and spire, vestry, &c. The style is Early Decorated. There are numerous places of worship in Bradford for several denominations of Dissenters, for Catholics, Quakers, &c.

St. George's Hall, opened in 1853, is a striking building, erected at a cost of £13,000. The external walls and columns are of Yorkshire stone. The front, or western elevation, is 75 feet in height from the ground to the apex of the pediment, and is composed of a rusticated basement 27 feet high, surmounted with Corinthian columns and pilasters, which support the entablature. The principal entrance is by three arched doorways, with folding doors on the basement of this *façade*. The entrance leads into a vestibule 46 by 25 feet, and 22 feet in height. From the centre of the floor springs the grand staircase, branching off to the right and left, and terminating in the gallery on

each side, leading to the stalls and area. The music hall itself is 152 feet in length, 76 feet in breadth, and 54 feet high, and is lighted by 16 arched windows, 14 feet high. The method of lighting it in the evening is by a continuous line of 1,800 gas jets, from pipes carried entirely round the hall, on the upper surface of the cornice (as in the Liverpool Hall). The heating is by the usual hot-water apparatus; the ventilation is well managed.

Peel Park is situated on the boundary of the borough, and partly in Bolton. The whole originally consisted of 64 acres, 47 of which (with Bolton House), were purchased from Mrs. Tolson for £9,000; and 17 acres of Richard Shaw, Esq., for £3,000. Bolton House, and several small lots of land for villa sites, have since been sold from it, for upwards of £6,500. There have been £6,000 already expended in laying out the Park, and it is calculated that it will require £2,000 more to complete it, making the gross cost £18,000. Towards this there has been realized by the sale of land, &c., as above, £6,500; grant from government, £1,500; raised by subscription, £7,000; given by Titus Salt, Esq., £1,000; and Messrs. Milligan, Forbes, and Co., £2,000.

There are numerous educational establishments in and near Bradford. The *Grammar School* was in existence in the time of Edward VI. The usual powers for its government are vested in "thirteen men of the most discreet, honest, and religious persons in the neighbourhood, whereof the Vicar of Bradford shall always be one."

The academic establishment called *Airedale College*, which is at Undercliff, immediately near Bradford, is for the preparation of young men for the ministry in the Independent churches. The Baptists have a college at Horton, and the Wesleyan Methodists an establishment for the education of the sons of ministers at *Woodhouse Grove*.

There are several places in the immediate neighbourhood of Bradford which the visitor can observe with interest. *Bowling*, about a mile and a half south-west of the town, was once the manor and residence of a family of that name. The hall is an ancient building, and was the head-quarters of the Earl of Newcastle, in the year 1642, during the siege of Bradford. It was here (as tradition says), that while in bed, after he had formed the determination of giving up the inhabitants of Brad-

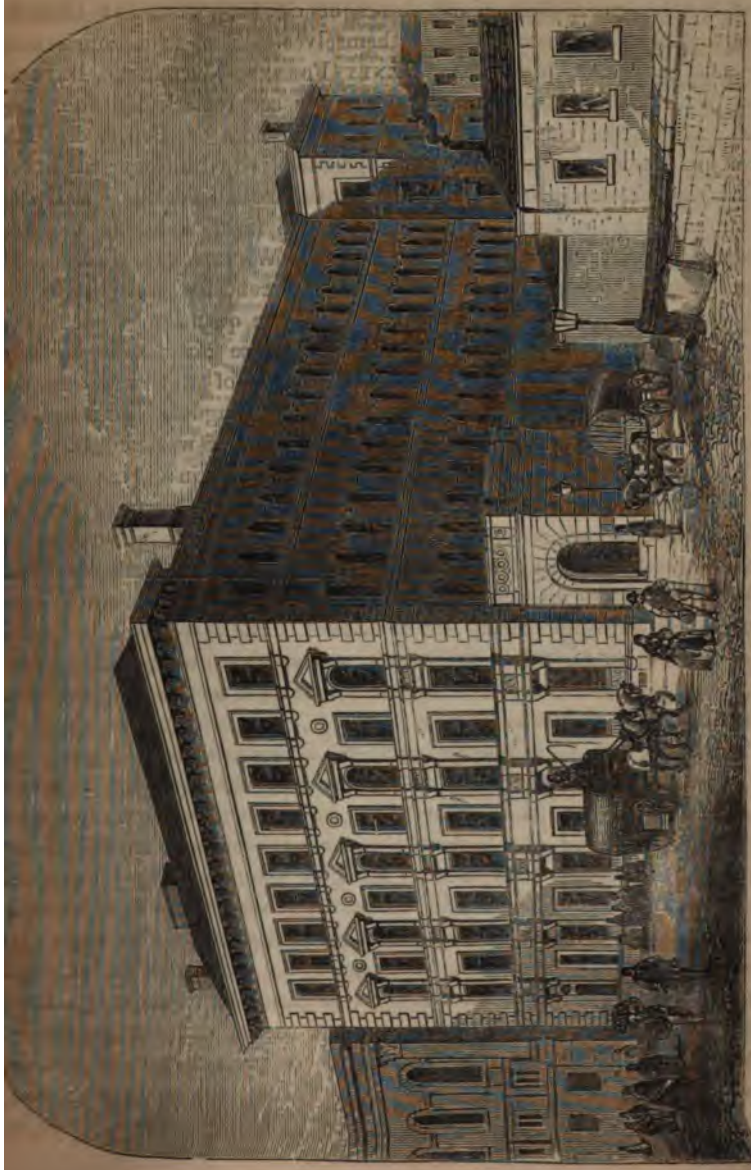
ford to military execution, he was dissuaded from his intention by a female apparition. It is supposed that some patriotic woman really appeared to him, and remonstrated with him on his sanguinary resolution, or that a dream produced the effects. There are extensive iron works here, also at Brierley, two miles south-east from Bradford. Eccleshill, Manningham, Allerton, Haworth, Horton, and Clayton, are all scattered villages, at short distances from Bradford; their populations are chiefly employed in the stuff and cloth manufactures. Horton is the most populous and important of the smaller towns, and possesses a Free Grammar School. Abraham Sharpe, the celebrated mathematician and machinist, was born at Little Horton, about 1651.

THE COMMERCIAL ASPECT OF BRADFORD.

Bradford owes much to its situation in the very centre of the great manufacturing districts of Yorkshire, and to the abundance of coal in its vicinity. Ironstone is also plentiful, and there are some extensive foundries. The leading manufacture of Bradford is of worsted stuffs here called "Merinoes" and "pieces;" worsted yarn is also spun extensively in the town; and BRADFORD IS THE GREAT WOOL MARKET OF GREAT BRITAIN. The manufactures are now almost entirely confined to the products of machinery. An extensive trade is carried on by cotton-yarn and thread-warps, being used in combination with worsted shoot, by which very beautiful goods of the Orleans, Merino and Coburg class, are made.

MESSRS. MILLIGAN, FORBES, AND CO., WAREHOUSEMEN.

Some of our readers may not understand the general designation of "Warehousemen," but under this term is comprised a very important branch of commercial enterprise, that of purchasing goods of the manufacturers direct, and selling them again to wholesale dealers. This business can only be transacted by persons who have abundant resources and who have, also, a practical knowledge of the articles which are more *immediately* connected with these operations. Messrs. Milligan, Forbes



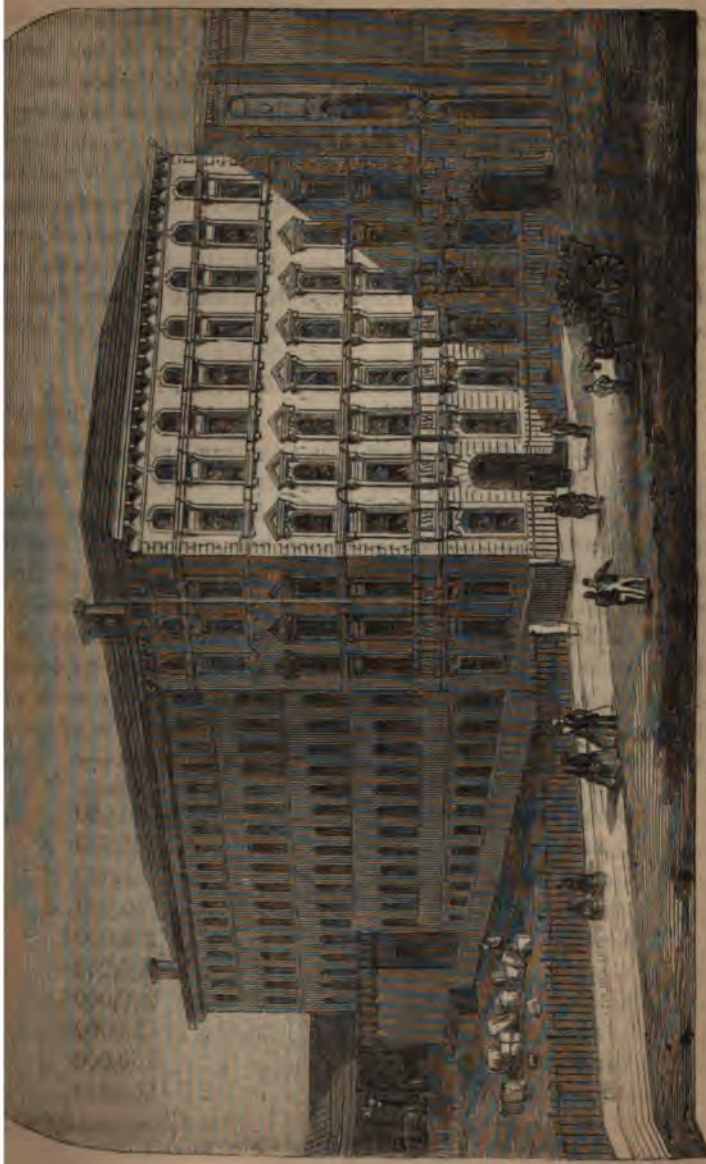
THE FOUNTAIN, GOTHIC SCHOOL OF DESIGN, FOR BEN, AND CO.

and Co. are purchasers of all kinds of STUFF, SILK, AND COTTON GOODS from the manufacturers themselves. The firm consists of MESSRS. ROBERT MILLIGAN, HENRY FORBES, NATHANIEL BRIGGS, and WILLIAM GREENWOOD. The premises are remarkably fine, and rank among the chief of the commercial palaces of Bradford. The principal front (represented in our engraving) is in Hallings; the other front (also pictorially shown) faces the Lancashire and Yorkshire Railway.

On entering the premises, we have, on the right and left, the fine range of offices, and before us the immense WAREHOUSE, with steam-engine for packing presses, three lifts, &c. Ascending by the lift to the top floor, the visitor will be surprised to see the quantity of machinery for rolling, measuring, blocking, &c. There are six floors similarly furnished. Altogether, the business operations of this firm are the most important in their character of any in the kingdom, and involve a vast outlay of money, and employing a small army of workpeople.

The arrangements of this firm are excellent, owing in a great measure to the admirable construction of the premises, which were erected in 1857, under the suggestions of Mr. Briggs. The town of Bradford is much indebted to the proprietors of this colossal business for their liberality, and the interest they have shown in its welfare, being foremost in all works of charity and usefulness. The noble park, prepared at great cost, and given to the people, was an object of special interest to these gentlemen, who were among the earliest and most munificent contributors to the undertaking.

The history of the two senior partners of this prosperous copartnery affords another illustration of the success which has attended so many men, who, within the half century, have, by honest industry and prudent enterprise, acquired the highest commercial positions in the West Riding of Yorkshire. Mr. Robert Milligan, after devoting himself for many years to his business with unremitting assiduity, acceded to the almost unanimous call of his townsmen, and went to Parliament as their representative. Having discharged his senatorial duties with such fidelity as to place his health in jeopardy, he voluntarily retired from this honourable post, and is now the useful and upright magistrate, enjoying the *otium cum dignitate* in his quiet retreat at Acacia, near Apperley Bridge. His partner, Mr. Forbes, was, as a young man, *one of the most* successful burghers in the North of England. When he



THE WAREHOUSES OF MESSRS. MILLIGAN, FORBES, AND CO.

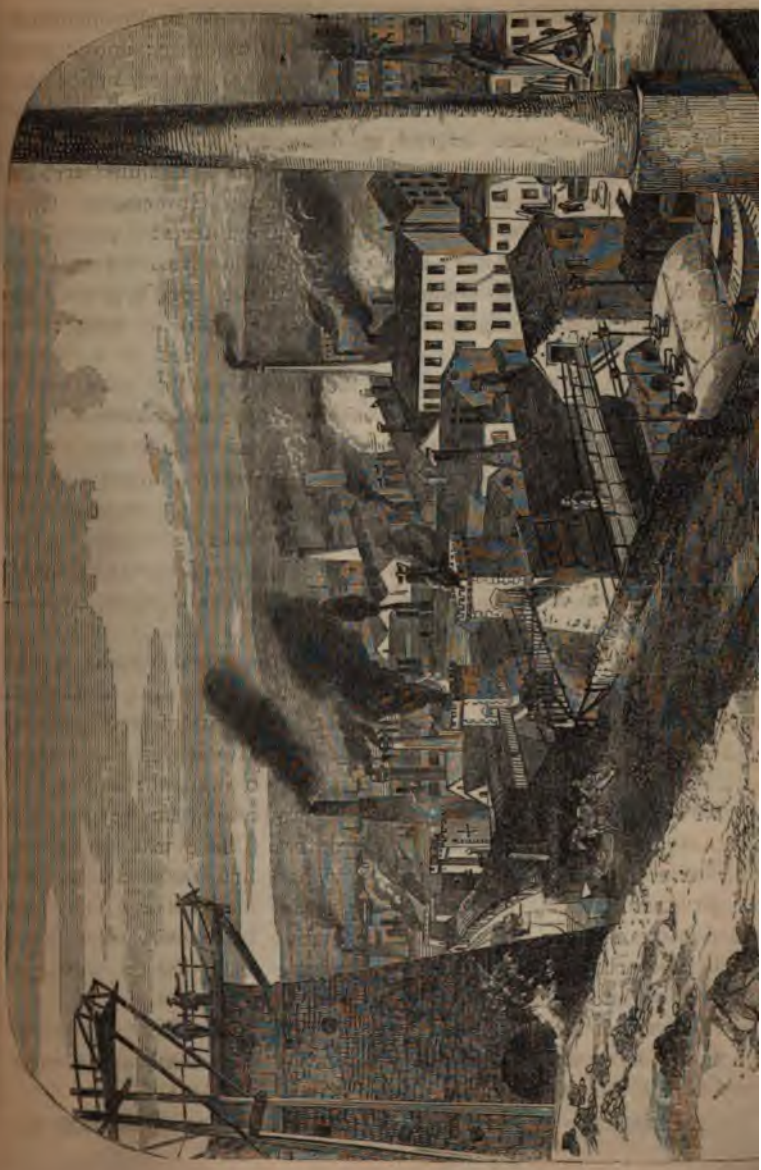
joined his fortunes to those of Mr. Milligan, his quick intelligence and high reputation gained for his house a character which has long been well sustained in Yorkshire and in London. Mr. Forbes has not unfrequently been urged to go into Parliament, but he has always resolutely declined this honour. He has resided very much at Harrogate; and within a large sphere of influence, he has been found spending the later years of life in works of high social and religious usefulness. We believe it is well known that the International Exposition of next year will be well sustained by the exhibitors of Bradford, and we feel assured that the laurels earned in London and in Paris by this firm will be intertwined with fresh garlands woven from the successes of 1862.

THE BOWLING IRON COMPANY:—
MANAGERS, MESSRS. TURNER AND W. MARSHALL SELWYN.

The Works of the Bowling Iron Company are pre-eminently distinguished for the manufacture of the VERY BEST IRON ONLY. The premises, from their extent, and the animation which pervades them (no less than *three thousand* workmen being employed), resembles a small town of busy manufacturers; and the productions of the Company are not only multifarious, but of the most valuable quality.

The visitor to these marvellous Works will be surprised on seeing the immense quantity of iron, and the various processes employed in its manufacture. The statistics relating to this metal (far more valuable than gold in its intrinsic use) are worth quoting. We will state the estimated production of crude iron in various countries:—

	Tons.
Great Britain	3,000,000
France	750,000
United States	750,000
Prussia	300,000
Austria	250,000
Belgium	200,000
Russia	200,000
Sweden	150,000
Various German States	100,000
Other Countries	300,000
	6,000,000



In referring to the above, it will be seen that Great Britain produces as much crude iron as all other countries put together; and a great portion of that iron being converted into bars and plates, indicates a large and important article of production,—an article of immense value to the country—of great demand at home and abroad—and justly entitled not only to improvements and economy in its manufacture, but to the generous support of a liberal and enlightened Government.

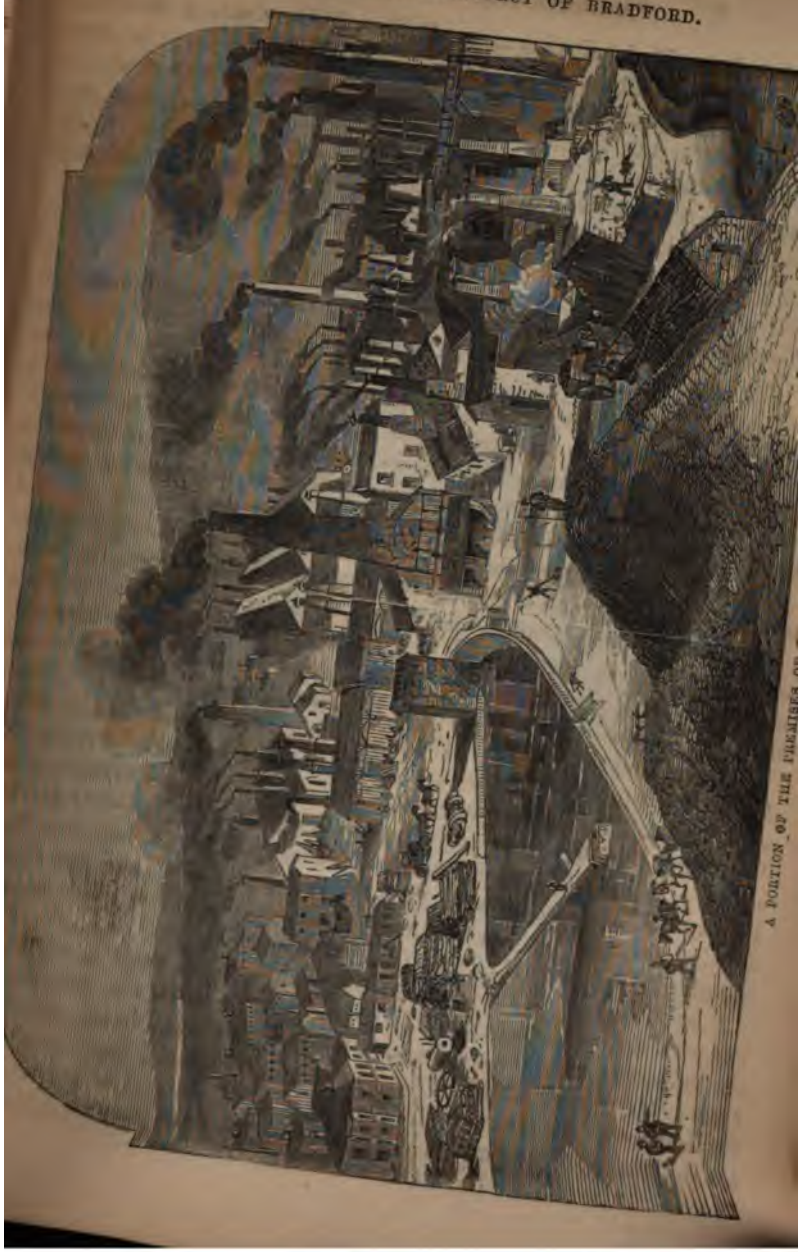
The history of the Iron trade is one of singular interest; and a keen observer of the progress of our manufactures of metals will have remarked how rapid has been the development of this trade. Dr. William Fairbairn, in his "History of Iron," mentions five distinct epochs: the *first* dating from the employment of an artificial blast to accelerate combustion; the *second* marked by the employment of coke, and a reduction, about the year 1750; the *third* dating from the introduction of the steam-engine, and on account of the facilities which that invention has given for raising the ores, pumping the mines, supplying the furnace with a copious and regular blast, and moving the powerful forge and rolling machinery: this era we may safely attribute to the genius of James Watt. The *fourth* epoch is indicated by the introduction of the system of puddling and rolling, very soon after the employment of the steam-engine.

The *fifth*, and last—though not the least important epoch in the history of this manufacture—is marked by the application of the hot blast—an invention which has increased the production of iron fourfold, and has enabled the ironmaster to smelt otherwise useless and unreducible ores; it has abolished the processes of coking and roasting, and has given facilities for a large and rapid production, far beyond the most sanguine anticipations of its inventors. Some manufacturers, taking advantage of so powerful an agent, have not hesitated to reduce improper materials, such as cinder heaps and impure ores; and by unduly hastening the process, and attending to *quantity* more than *quality*, have produced an inferior description of iron, that has brought the invention into unmerited obloquy.

We have alluded to this, because the Bowling Iron Company offers an honourable exception to this nefarious system, and the utmost regard is paid to commercial integrity.

The premises are of enormous extent, and comprise, besides the

THE COMMERCIAL ASPECT OF BRADFORD.



A JOURNEY OF THE FLEECE

foundries, large Model Departments, Rolling Mills, Cutting Shears, Departments for Railway Tires, Axles, Boiler Plates, &c. &c. As an instance of the great traffic constantly carried on here, we may remark that there are in the Works fourteen miles of railway running out of the Midland Railway.

Messrs. Turner and Selwyn are indefatigable in their management of these wonderful Works, which are extremely curious, and will well repay the visitor for a close inspection.

Messrs. Sugden and Briggs, Spinners and Manufacturers, Bowling Mills.

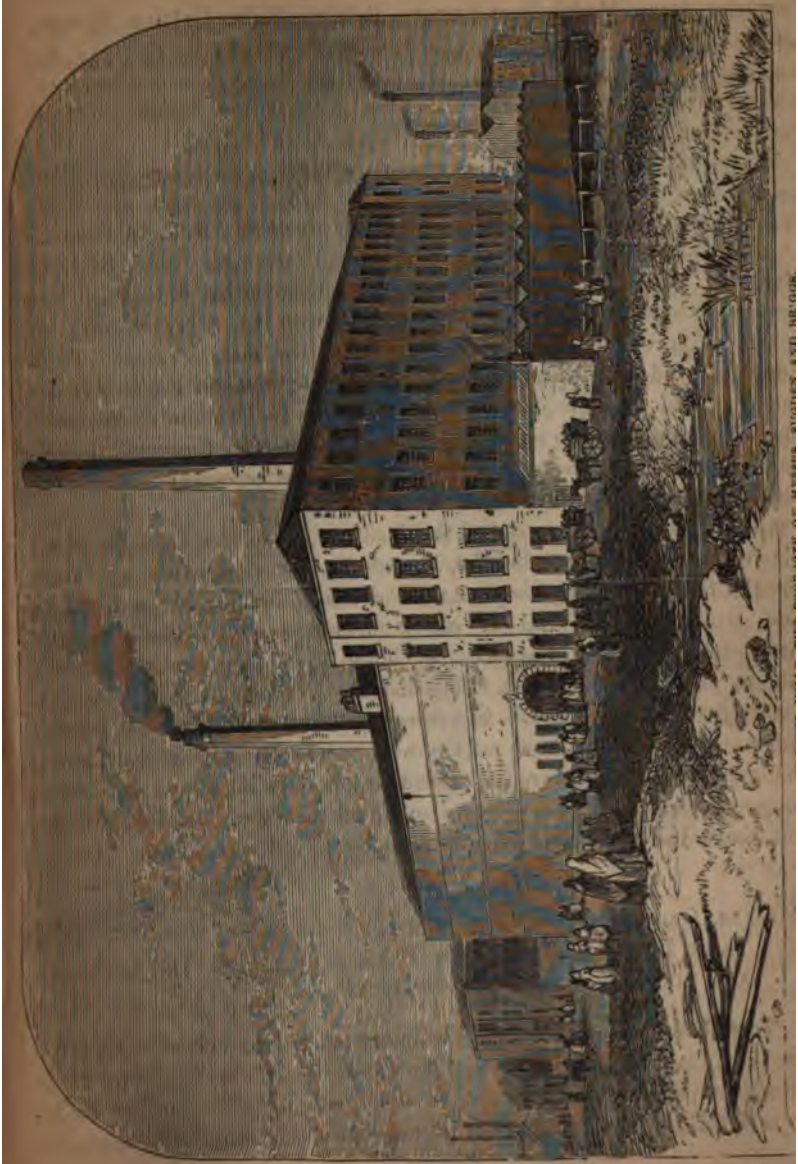
The proprietors of the Bowling Mills have also offices in Booth-street, Hallings. The former buildings were erected in 1850, and are conspicuous for their extent, and the enormous business operations carried on within them. The persons employed number upwards of 800, assisted by steam facilities of 360-horse power.

The visitor to Bradford should not fail to pass a few hours at this model manufactory, one of the largest of the kind in Yorkshire.

Entering the large court or quadrangle, we observe in the centre the enormous Boiler House, the Blacksmiths' and Joiners' Shops, and the large Drying Rooms. The chimney, which indicates from a distance the locality of the Bowling Mills, is 150 feet high.

We can but barely allude to the principal departments of the Bowling Mills; the reader must make up for the deficiency by a careful examination of all that is interesting and noteworthy. The Sorting and Washing Departments are very spacious. In the Combing Shed are three of Lister's Patent Machines, and several others. In one of the Drawing Rooms we counted 12 large spinning frames and 3 sets of drawing frames. In the Spinning Frame Room are upwards of 30 spinning frames, several of which have 132 spindles.

Messrs. Sugden and Briggs are also manufacturers, and this leads us to the Weaving Department. In the Bobbin Room the visitor will see thousands of baskets containing bobbins to be used in the weaving room. Here we counted during our visit 352 looms, many of them furnished with the jacquards for pattern goods. Several of the rooms are supplied with jacquard and box looms for the same purpose.



There are numerous warehouses, stock rooms, mechanics' shops, &c., which we have not space to particularize. Altogether this colossal manufactory is one of the most eminent in the kingdom.

The Railway Foundry Company, Manchester Road.

These premises are under the able management of Mr. John Dixon.

The staple manufactures here are solid wrought iron Railway Carriage Wheels; Engine, Tender, and Locomotive Wheels. The greatly extended application of wrought iron to every variety of construction renders it of great interest to the manufacturer. It is now employed more extensively than cast iron; and, on account of its ductility and strength, nearly two-thirds of the weight of material may, in many cases, be saved by its employment, whilst great lightness and durability are secured. Its superiority is especially evident in articles where great stiffness is not required.

On the extensive premises of the Railway Foundry will be found all the necessary departments of a Foundry. The visitor will see large Smiths' Shops, Turning Shops, Axle and Wheel Turning Shops, Slotting and Drilling Shops, full of costly machinery; Tyre-Blocking Department, numerous Furnaces, Welding Tyre Department, Pattern Shops, also Joiners' Shops. The Railway Waggon Building Department, *for which this firm is pre-eminent*, is carried on in Bower street. Some of the best railway waggons to be seen in the United Kingdom are manufactured here, and are perfect models of workmanship. Under the active personal superintendence of Mr. John Dixon the Railway Foundry has attained a well-deserved reputation.

Messrs. Oates Ingham and Sons, Cotton Warp and Worsted Yarn Dyers, Stovers and Bleachers; also Finishers of all kinds of Fancy and Stuff Goods.

Travellers by the Midland Railway cannot fail to notice these large and commanding premises, which are situated in the township of Manningham, parish of Bradford. The accompanying sketch of the buildings faithfully represents the importance and the substantial characte

THE RAILWAY FOUNDRY, THE PROPERTY OF THE RAILWAY FOUNDRY COMPANY.

THE PRINCESS OF WALES' OATH (SHIELD AND POST

of the manufactory. An area of seven acres is covered with offices and workrooms. The persons employed average between three and four hundred, and the steam-power employed to assist their labours is of 240 horse.

Messrs. Oates Ingham and Sons have additional premises and commercial offices in Old-lane, Halifax, about three quarters of a mile from the town.

Messrs. J. and J. Cliff, Ironfounders, Engineers, Boiler Makers, etc., Old Foundry.

The large establishment of Messrs. J. and J. Cliff is in Bradford, the chief entrance being in Tyrrell-street, and the premises being bounded on one side by Toad-lane, and on the other by Chapel-lane, covering nearly three acres of land.

The number of operatives employed in these important works exceeds three hundred.

A variety of manufactures is carried on at the Old Foundry, consisting of fireproof work, gasholders, engines, boilers, &c. The whole of the fireproof work of Messrs. Crossley and Son, of Halifax; John Holdsworth and Co., Halifax; T. Salt, Sons, and Co., Saltaire; W. Walker, Esq., Bradford, &c. &c., were entrusted with, and satisfactorily completed by Messrs. J. and J. Cliff. They are also erectors of iron pillars, and other articles of that description for Railway Bridges, &c. These gentlemen are, at present, erecting a pier at Worthing, in Sussex.

On the premises is a large Gas and Water-Pipe Foundry. One hundred and fifty ton-weight of piping is cast here weekly. There is an enormous quantity of drilling, boring, turning, sliding, and planing machines in the various departments of this extensive foundry. There are, also, a large Smiths' and Model and Pattern Shops.

One department is entirely devoted to the manufacture of Cottage Boilers, for which Messrs. J. and J. Cliff have a great reputation. The utility of these boilers, and their moderate cost, have led to an extensive sale.

It is impossible in our limited space to describe the Works at the Old Foundry minutely, but the visitor to Bradford will find here much to interest his attention.

J. & J. CLIFF
IRON AND BRASS FOUNDERS

Mr. George Hodgson, Machinist, Power Loom Maker and Iron Founder, Laycock's Mill and Beehive Mills, Bradford.

The accompanying engraving represents the extensive Machine Works of Mr. George Hodgson, of Thornton Road, Bradford; Laycock's Mill being situate on the right, and Beehive Mills on the left-hand side of Thornton Road.

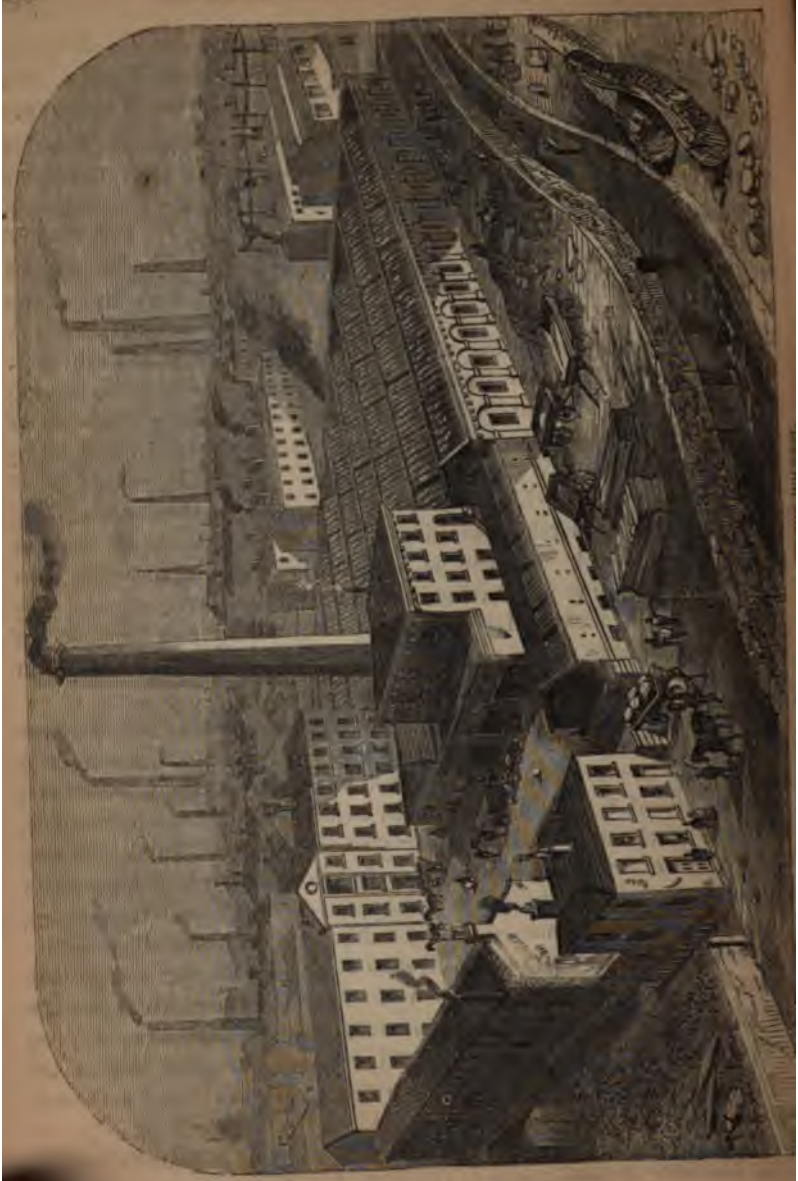
These works were established in 1849, and the remarkable success which has attended Mr. Hodgson's efforts can only be attributed to the thorough practical and theoretical knowledge which he possesses, and the close personal attention which he has always paid, and still continues to devote, to the making and obtaining the best self-acting machines, which produce the exact and somewhat delicate character of most part of the movements which go to make up the perfect weaving loom.

Another reason of his astonishing success in power loom making consists in the general subdivision of labour that obtains throughout these works; each workman is specially conversant with his own department, more than with any other; the natural consequence being that he can do more and better work in a given space of time, than if the same workman were employed on various and different machines in the course of the same week.

Mr. Hodgson confines himself generally to the making of the power loom in all its branches, variety, and improvements; and a wonderful impetus has of late years been given to the trade, from the invention and introduction of the satin, lena, gauze, twilling and cross-over motions and the mechanical appliances for changing the shuttles and altering the threads of the cloth, without stopping the loom; which ingenuities have put the manufacturers in possession of resources, for producing variety of goods, which were utterly unknown or unheard of before.

Great praise is due to Mr. Hodgson for the untiring energy with which he has applied himself, as well as for the enormous expense to which he has gone in perfecting these very desirable improvements; and it is very satisfactory to state, that in this direction, as well as the general perfecting of the ordinary loom, he has been eminently successful.

All the looms of Messrs. Titus Salt, Sons, and Co., of Saltaire, and those of other eminent manufacturers in the neighbouring towns, were made



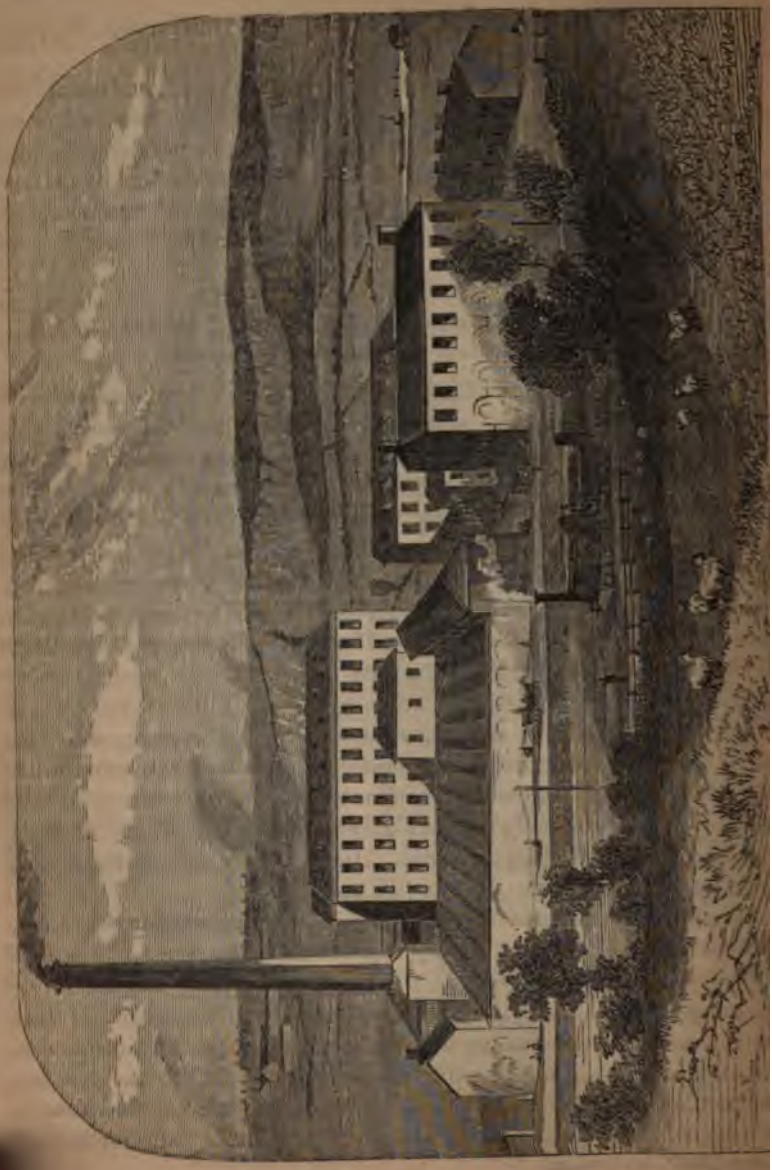
this place, and thousands are now being sent to France, Belgium, Prussia, Russia, and the other parts of the Continent.

In walking through any part of this establishment, one cannot but notice the marked attention each of the workmen pays to what he has in hand, and the regularity, industry, and promptness of both men and master make the place figuratively "*a Hive of Bees;*" and in all our wanderings amongst the *ateliers* of the great seats of manufacturing industry in the kingdom, we have never seen a more energetic or contented body of workmen.

Mr. Samuel Sutcliffe, Cotton Mills, Township of Manningham, Parish of Bradford.

The visitor to the Great Exhibition of 1851 must have observed with pleasure the beautiful and elaborate machinery used in cotton-mills, and noticed their very superior and improved construction. At the mills belonging to Mr. Samuel Sutcliffe, the reader will have an opportunity of seeing cleaning, carding, roving, and spinning machines of the first class, and in full operation. In the Carding-Room are no less than twenty-two machines for that department. There are also four large Spinning-Mule Departments, and in one of them four mills, each 120 feet in length. In the Doubling Room are nine large Doubling Machines, each having 360 spindles. In another room, however, there are no less than 7,000 spindles. In the Winding and Warping Department are numerous winding and warping machines, all of the best construction, and made with the latest improvements. Mr. Sutcliffe is not only a cotton-spinner, but a manufacturer of double warp, and more especially the well-known Grandelle Warp, which is exported largely to Pennsylvania. He is also a manufacturer to a large extent of Printed Cotton Warps.

This establishment was founded by the present proprietor in 1841, and the business has been greatly increased of late years. Steam of 100-horse power is employed on the premises. Nearly 400 operatives are engaged throughout the mills, and, greatly to the credit of their employer, their moral and physical well-being are cared for with unusual attention. Schools and Reading-rooms are attached to the premises, and at the time of our visit (February, 1861) new schools were about to be erected at the cost of Mr. Sutcliffe. Such liberality and forethought bring *their own reward.*



Mr. Joseph Mitchell, Spinner of Mohair, White, Coloure Mixture, and Mottled Worsted Yarn of all Descriptions Valley Mill.

Mohair, or goat's-wool, is of very ancient use in manufacture, havin been employed for the furniture and covering of the Jewish Tabernacl The wool is grown in the neighbourhood of Angora, in the centre o Asia Minor, and is brought from thence on the backs of camels t Constantinople for shipment. Formerly yarn was spun by hand i Turkey itself to a large extent, and exported to France, but Englis spun mohair-yarn has now entirely superseded it. It is manufacture in Yorkshire, chiefly into articles for ladies' dresses, of great softnes lustre, and brilliancy.

Mr. Mitchell is the patentee of an ingenious machine for spinnin mottled yarn, which is thus described in the "Specification:"—

"This invention relates, firstly, to spinning mottled yarns, or yarn composed of two colours made by combining two rovings of differen colours, which are drawn simultaneously and spun together. And i order that the proportions of such colours may be varied—that is, t have one colour to preponderate over the other, and still have th rovings from which they are made or spun of equal thickness—w employ an additional pair of 'back rollers,' each pair being driven o operated independently of the other pair, which by means of chang gear we can vary in relative speeds, thus giving a slow motion to on pair, and a quick motion to the other, in proportion as we require th colours to vary, or one preponderate over the other, both rovings bein drawn by the same pair of front or drawing rollers; we consequentl obtain two different draughts, or a separate draught on each roving, an are thereby enabled to vary the proportions or relative quantities o each colour in the yarns as may be required, without having first t prepare different or unequal thicknesses of rovings for such purpose.

"Secondly, this invention relates to means of combining long and shor wools or other fibrous substances in the same yarn, and consists i having the framing or stands which carry the aforesaid two pairs o back rollers so constructed or arranged and capable of adjustment, thr each pair can be set or adjusted to the particular length of staple o length of fibre of each sort or substance, whereby we are enabled t combine long and short wools, or short wool with mohair or alpac and silk in the same yarn, and also make various other combinatio of different fibrous substances."

A, the "front rollers" or drawing rollers; B, the "back rollers;" C, the rovin bobbins; D, additional pair of back rollers; and E, the roving bobbins for supply ing roving to the said rollers. Each pair of back rollers are supported in separa bearings or pedestals, which are capable of being moved nearer to or further fr

FIG. 1

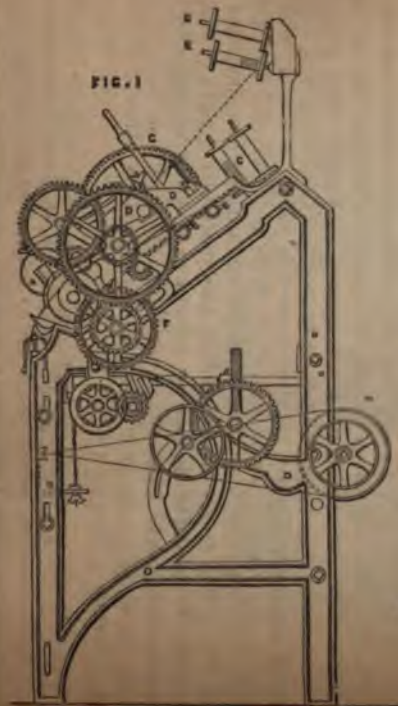


FIG. 3

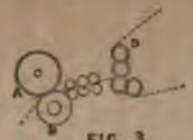
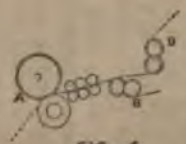


FIG. 4

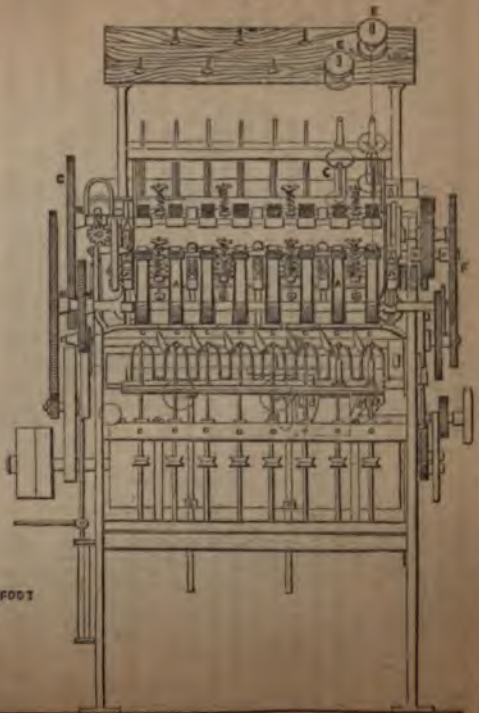


SCALE OF FEET

0 1 FOOT

0 2 4 6 8 10 INCHES

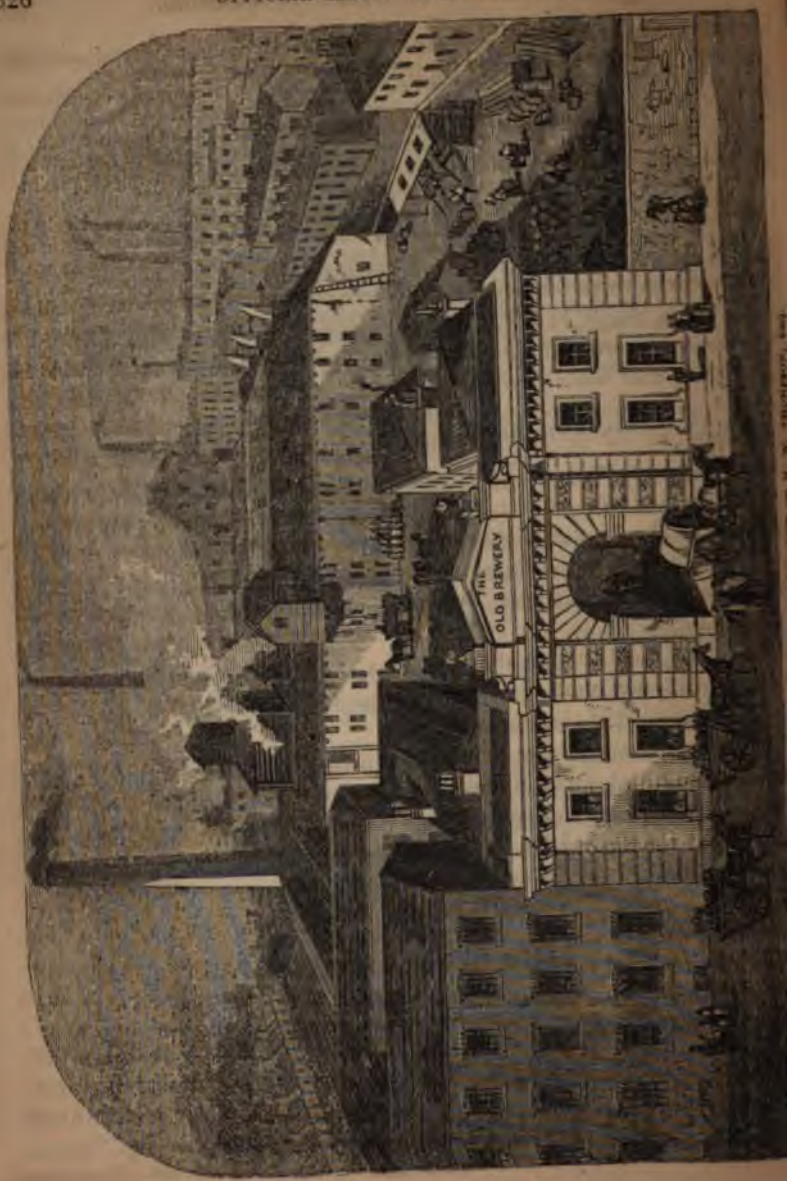
FIG. 2



ollers by racks and pinions, or other suitable means, as may be required, f rollers being driven by separate change gearing F and G.
he arrangement of the rollers, and the course of the rovings of different spinning "mottled" yarn, by reference to which it will be perceived that of back rollers B be driven at a quicker speed than the other pair D, will admit or allow a greater quantity of roving to pass to the drawing he same time than the pair D will allow, although the roving supplied to of rollers may be each of the same thickness.
hows one position in which the back rollers may be placed relatively to for combining and spinning fibrous substances of different lengths of which we are enabled to mix long wool with short wool, or short wool air, alpaca, silk, or other fibrous substances in the same yarn; or, in fact, e various kinds or qualities of fibrous substances in one yarn or thread as und desirable. Each pair of back rollers are capable of being readily set oper distance from the front rollers according to the length of "staple" ly of each substance to be operated upon, or to the proper "ratch," as adily understood by practical spinners.

)LD BREWERY, THE PROPERTY OF MR. M. W. THOMPSON,

des as Brewer and Maltster under the name or firm of WIL-HITAKER AND Co. This Brewery was founded in 1757, and is in the township of Horton, and parish of Bradford.
roprietor has recently made extensive additions to the buildings, ably sustained the reputation of the Brewery as the best in ortant town.
usiness is chiefly confined to the brewing of Stout, Porter, nd Mild Ales. A steam-engine of twelve-horse power assists ations of the workmen.
e ground and first floors are two large malthouses; and on the nd third floors are large barley and malt chambers, in which bins, each containing 400 quarters of malt. The barley is at the top of the building, screened, and made into malt, which, economical and ingenious arrangements of wire cylinders, malt-rollers, hoppers, and patent machine, finds its way into the b, which contains twenty-four quarters of malt, and the coppers le to boil, the one sixty and the other thirty barrels. A hop hold sixty barrels, and two refrigerators with 1200 feet of serve to produce the necessary reduction of temperature in the The beer has hitherto been worked here in eleven stone but the proprietor, in his alterations, has recently added three one squares, and completed a wooden plant on the Burton e for working *INDIA PALE ALE*.


THE
OLD BREWERY

On the ground-floor are nine PORTER VATS, each holding 7,200 gallons. Beneath, are large vaults full of barrels of Stout, Porter, and Strong Ales.

The manager of this extensive Brewery is Mr. Holmes, who is singularly well qualified to perform the duties of his position.

We may notice at Shipley, near Bradford, one of the greatest curiosities of modern manufactories, the immense Saltaire Alpaca Mills in the valley of the Aire. Here are manufactured fabrics composed of alpaca with cotton warps, and with silk warps yarn-dyed, and dyed in the piece; they are plain, twilled, figured, and chines, or made with printed warps. Goods are also made here, composed of mohair, with similar combinations. All these productions are characterised by great brilliancy and lustre, equal in many cases to silk; they are also remarkable for regularity of texture, softness, and fineness.

The size of the building in which these articles are manufactured is colossal. The floor area is about 12 acres. The main range of buildings, or the mill proper, runs from east to west, nearly parallel with the lines of railway from Shipley to Skipton and Lancaster. This pile is six stories high, 550 feet in length, 50 feet in width, and about 72 feet in height. A bold Italian style has been adopted, and it is carried out in stone. (In our next Edition we hope to introduce engravings and extended notice of these works.)

Amongst the collateral works are several hundred houses and cottages for the workmen, with shops, &c.; baths and wash-houses, a covered market, schools, church and parsonage, and model lodging-houses. The gas-works, calculated to supply 100,000 feet per day, for 5,000 lights, are constructed on White's hydro-carbon principle; while a tubular girder bridge, in five bays of about 70 feet in length, spans the canal and river Aire, thus giving access to the property lying on the left bank. The architects of this immense building were Messrs. Lockwood and Mawson, of Bradford; engineer, Mr. Fairbairn, of Manchester.

It is with pleasure we recommend to the visitors' attention the UPHOLSTERY ESTABLISHMENT OF MR. THOMAS MILLS. We understand that the furniture of Methley Hall, the superb residence of Titus Salt, Esq. (of Saltaire), was supplied by Mr. Mills.

As a good exponent of *local news*, we may mention the BRADFORD

REVIEW, published on Thursdays and Saturdays. It is justly styled a *cheap, independent* and *liberal* paper, useful to the merchant, the manufacturer, the agriculturist, the politician, and the general reader. The *Bradford Review* has also the rare merit of being a useful *family newspaper*, all objectional matters being carefully treated, so as not to offend the strictest propriety.

Leaving Bradford, we proceed to HALIFAX, distant seven miles south-west of Bradford, and seventeen miles west-south-west of Leeds. The town is about two miles long and one mile broad, and contains a population of 37,008 in 1861, against 33,582 in 1851. Although, on approaching it, Halifax seems to stand in a low valley, owing to the ranges of hills by which it is almost wholly surrounded, yet it is, in reality, situated on the south-eastern declivity of an eminence which rises to a considerable height above the river Hebble. The scenery, in the immediate neighbourhood of the town, is of a highly interesting and beautiful character.

The parish of the same name in which Halifax is situated is of greater extent than the whole county of Rutland, being seventeen miles in length, and averaging eleven miles in breadth, comprising an area of 124 square miles, or 79,200 acres. The singularity of its name is said to be derived from *Hali Fax*, signifying the holy face, in allusion to a relic called the face of St. John, preserved in a hermitage which anciently occupied the site of the present church; or, as others think, implying the holy ways leading to the hermitage, for *fax*, in Norman French, is an old plural noun denoting highways. The early history of the place contains nothing remarkable. During the contests of the Civil Wars, the town was garrisoned by the Parliamentarians, and at that period a smart action took place at a spot in the neighbourhood, which retains the name of Blood Field to this day.

Halifax contains several public buildings, principally stone structures. The *Parish Church*, with the exception of part of the north wall, which appears to have been built in the time of Edward I., was erected between the years 1450 and 1470. It is a fine building in the later English style, having a nave, chancel, aisle, and two chapels; also an embattled tower *surmounted* by eight pinnacles, and underneath the church, towards the *east, is a crypt*. The ceiling is adorned with the armorial bearings o

all the incumbents. There are several other churches and chapels, wi places of worship for Dissenters. The *Free Grammar School* was found in 1585. The *Blue-coat School* was endowed in 1642, for twenty po children. Besides these buildings, there are others for literary a charitable purposes; a *Cemetery*, *Infirmary*, and *Public Baths*; *Theat Assembly Rooms, etc.*

HALIFAX.

Among the remarkable persons born at Halifax, or connected with the town and neighbourhood, we may mention Henry Briggs, an eminent mathematician, who made discoveries relative to logarithms, born at Warley, about 1556; Archbishop Tillotson; Sir Henry Saville, an accomplished scholar; and Mr. David Hartley, a celebrated metaphysical writer. Dani Defoe, the author of "Robinson Crusoe," and Sir William Herschel, th celebrated astronomer, were residents at Halifax, the latter having bee organist in the church.

THE COMMERCIAL ASPECT OF HALIFAX.

Halifax ranks next to Leeds and Bradford as a seat of the woollen manufactures; for these purposes it is admirably assisted by nature and art. The descent from the neighbouring hills of numerous brooks, so important as agents of power before the introduction of the steam-engine, gave to Halifax those facilities for manufacturing which were early a source of wealth. Its situation with reference to Manchester and Leeds, the abundant supply of coal and water, the inland navigation and railway communication, have tended to increase its importance. The commencement of its woollen trade is traced to the time when the manufacturing Flemings sought refuge in England, in the reign of Henry VII., from persecution in their own country. Many settled in Yorkshire, especially at Halifax, which was for many years the seat of its manufacture, and has always maintained its superiority in the production of damasks, and other heavy goods.

"The great epoch," observes Mr. Forbes, "in the history of the worsted trade, was the introduction, about the year 1790, of the spinning machinery. The manufacturing processes, at this period, were characterised by the most primitive and Arcadian simplicity, and a degree of slowness which, in these railway times, we can scarcely realize. The work was entirely domestic, and its different branches widely scattered over the country. First, the manufacturer had to travel on horseback to purchase his raw material amongst the farmers, or at the great fairs held in those old towns that had formerly been the exclusive markets, or, as they were called, 'staples' of wool. The wool safely received was handed over to the sorters, who rigorously applied their gauge of required length of staple, and mercilessly chopped up by shears or hatchets what did not reach their standard, as wool fit only for the clothing trade. The long wool then passed into the hands of the combers; and having been brought back by them in the combed state (technically called 'top'), was again carefully packed, and strapped on the back of the sturdy horse, to be taken into the country to be spun. For this end the West Riding manufacturer had not only to visit the villages in the immediate neighbourhood of Halifax, Bradford, &c., but used periodically to traverse the romantic hills and dales of Craven. Here, *at each village*, he had his agents, who received the wool, distributed it

amongst the peasantry, and received it back as yarn. The machine employed was still the old one-thread wheel; and in summer weather, on many a village green or hill-side, might be seen the housewives plying their busy trade, and furnishing to the poet the vision of 'Contentment spinning at the cottage door.' Returning in safety with his yarn, the manufacturer had now to seek out his weavers, who ultimately delivered to him his cavelets, or russels, or serges, or tammies, or calimancoes (such were then the names of the leading fabrics, and still retained), ready for sale to the merchant or for delivery to the dyer."

The spinning-jenny was introduced into Halifax and the neighbourhood about 1790.

The chief articles now manufactured at Halifax are worsted stuffs, including shalloons, tammies, calimancoes, duroys, everlastings, moreens, shags, serges, and merinoes; also baizes, narrow and broad cloths, and kerseymeres; bombasins, crapes, and other fabrics, composed of silk and worsted, are also manufactured here, and the cotton trade is carried on to a considerable extent. Excellent wool cards are also made in Halifax. In the neighbourhood are large quantities of freestone; slate of a superior quality is also found; fuel for domestic purposes, and for the consumption of the various factories, is supplied from coal-mines at a short distance. A weekly market is held, chiefly for the sale of woollen cloth. For the accommodation of the traders in this article, there is a large Cloth Hall, of freestone, occupying an area of 10,000 square yards, and divided into apartments for the reception of goods.

MR. JOSEPH MOXON KIRK, DYER AND FINISHER OF WORSTED, COTTON AND WORSTED, AND MIXED FABRICS OF WORSTED, ALPACA, COTTON, LINEN, AND SILK STUFF GOODS.

These premises are situated in Old-lane, near Halifax, and are among the most extensive of their kind in the trade. The number of workmen employed at these works, and at Bowling, where Mr. Kirk has another large establishment, exceeds 500, and the consumption of coals at the two places amounts to nearly twenty thousand tons per annum.

The machinery in all the different departments is very extensive, and on the newest and most improved principles.

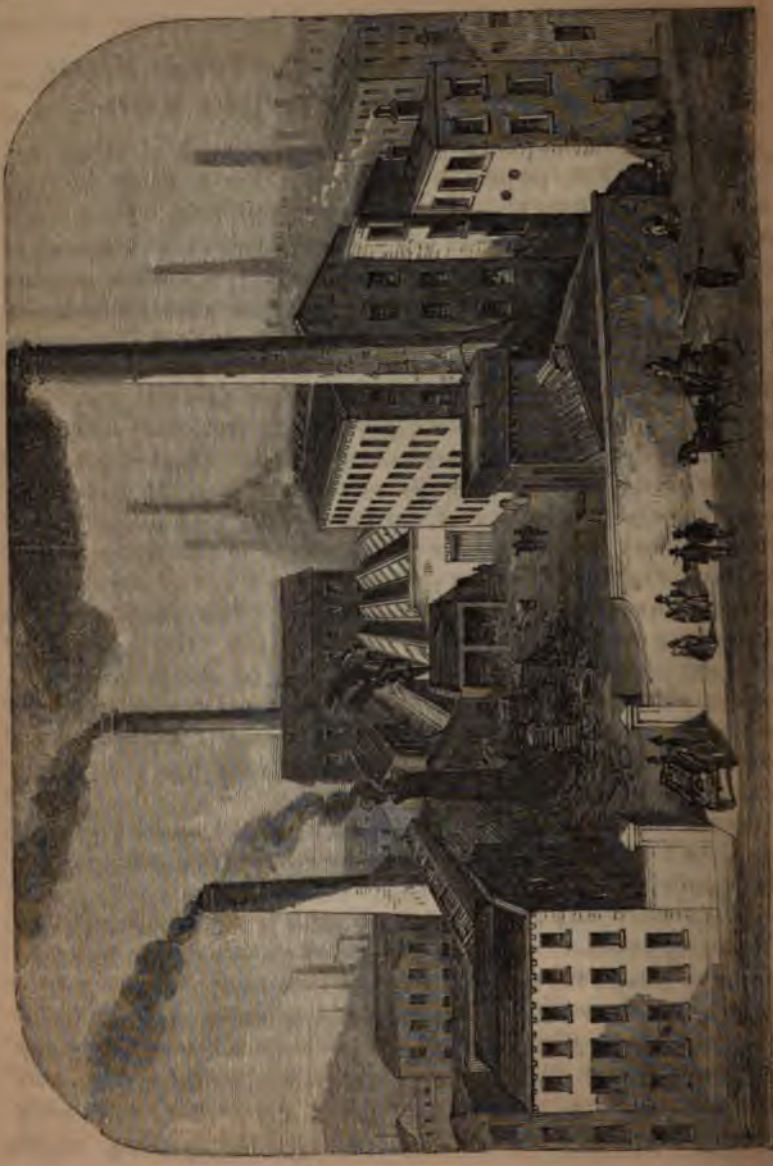
The business has been carried on for upwards of 40 years.

Messrs. J. B. and J. Farrar, Worsted-Machine Makers, Iron and Brass Founders, etc., Globe Works.

The Globe Works are situated in Well-lane and Wade-street, and were erected for the proprietors, Messrs. J. B. and J. Farrar, in 1848, with various additions in intervening years until 1856. The business is of much older date, and may be traced as far back as the beginning of the present century. The workmen employed on the spacious premises number upwards of 300, and the manufacturing operations are facilitated by steam of 60-horse power.

Entering the Globe Works from Well-lane, we pass through the Smiths' Shop, in which are seven furnaces, and into the yard, where the visitor will see an immense quantity of pig iron, ready for conversion into various objects of importance in the arts. On the right is the large Foundry (100 feet long by 42 feet wide, and 24 feet high), which may be termed one of the finest of its kind in the parish. Here are two powerful cranes, indispensable in the *furniture* of a foundry. On the right of the yard, at the north end of the foundry, are the Joiners' Shops and Model Rooms. This portion of the premises is three stories high, 50 feet by 42 feet. Our readers are, no doubt, aware that before any article can be cast in metal, it is necessary that a model of it should be prepared, and from these models castings are made. In the rooms devoted to this department the visitor will see a large number of these models, which form an important branch in the founder's art.

On the left of the yard is a shed, containing 500 square yards, and at the back a two-story building used for stores. This portion of the premises is twenty-seven yards long. On our left is a lofty pile of buildings, five stories high. The lower room is full of costly planing and sliding machines. Ascending a flight of stairs, we enter one of the Machine Shops, 150 feet long by 90 in width; and the room is filled with worsted, spinning, twisting, and doubling frames, preparing, drawing, and every machine connected with the worsted trade. The visitor will remark here an ingenious and beautiful machine for covering wire with silk and cotton. Messrs. J. B. and J. Farrar have very recently invented a machine for doubling, twisting, and spinning, capable



of greatly accelerating the work effected by an ordinary machine. Adjoining this department are the large Store-rooms.

Retracing our steps through the premises to the Well-lane entrance, we notice on our right a building four stories high, 66 feet long, and 42 feet wide, and on the left a large shed, 72 feet long by 30 feet wide.

Altogether, the premises briefly described are most convenient and spacious, and give evidence of the large and increasing business of the estimable proprietors.

Mr. John Berry,

Millwright, Engineer, Iron-founder, etc., Bank Foundry.

These works (established in 1840) consist of two sections, the larger portion being on the left hand of the road from Halifax to Bradford and Leeds, and more particularly known under the designation of the Bank Foundry; while the premises on the opposite side are chiefly occupied for dressing castings, &c.

As regards the Bank Foundry, the operations are chiefly confined to general iron-foundry, such as casting gas and water pipes; mill-gearing for wheelwrights who have no foundry, &c. Mr. Berry has been for some years employed in manufacturing castings for Messrs. Crossley, the carpet manufacturers; Messrs. Ackroyd, the spinners, and other large firms that possess mechanics' shops, but have no foundry.

The Millwright Department is an important branch of the manufacturing operations at the Bank Foundry, Mr. Berry having given to it much of his attention. Millwrights' work consists principally in manufacturing main gearing in connexion with stationary engines, conveying the power from the engine to the several departments of the works. Gearing means bevel and spur wheels, shaftings, pulleys, &c.

Our readers will perceive how important is the work of a millwright, and in how many ways his ingenuity and skill must be put in practice. It is of late years, more particularly, that this description of manufacture has engaged in a great degree the attention of men of science. The use of cast iron and bevel wheels appears not to have become general until the latter part of the last century, and many of the schemes for grinding corn, pumping water, sawing wood, &c., were, until a comparatively recent period, exceedingly crude and imperfect.

THE BANK FOUNDRY, THE PROPERTY OF MR.

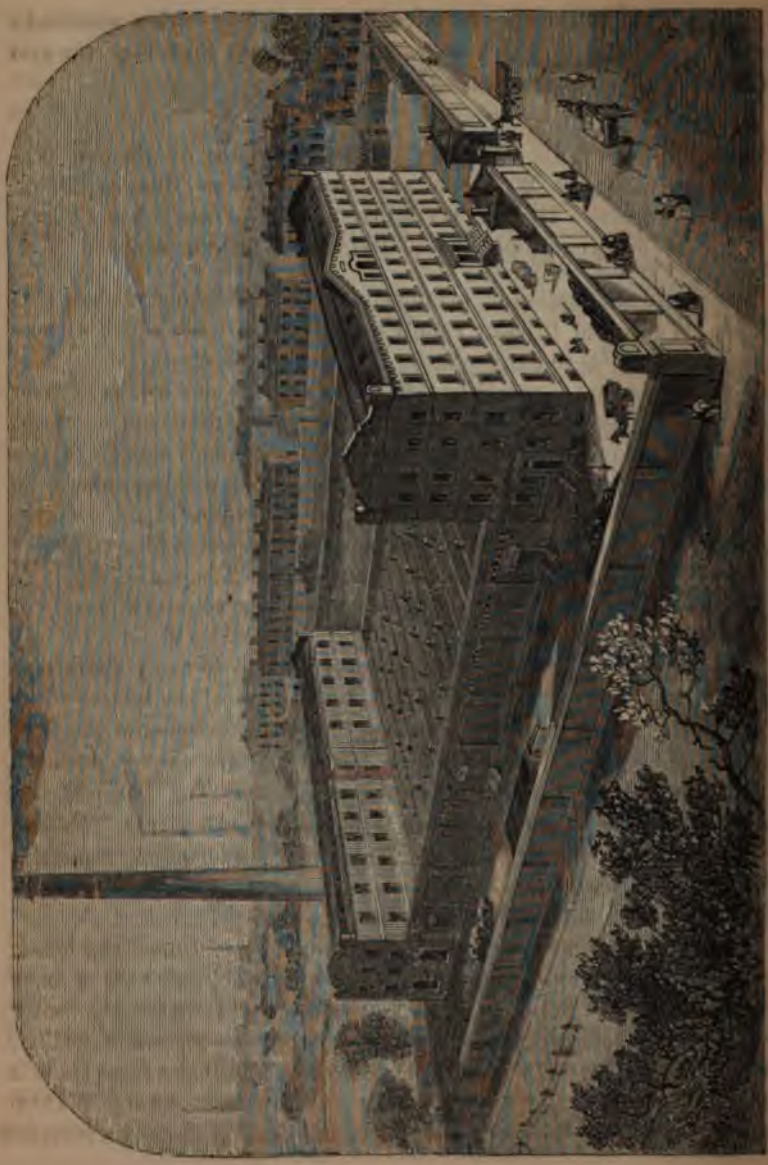
We have much pleasure in referring our readers to this gentleman for any particulars they may desire to have on any branch of the arts in which he is particularly engaged.

Messrs. Walsh and Brierley, Manufacturers of Elastic Fabrics, Elastic Worsted and Cotton Web Braces, Boys' and Ladies' Belts, Hair-cloth Crinolines, Vest Ties, Stock Foundations, Brace, Belt, and Girth Webs.

The above description of manufactures will satisfy our readers that Messrs. Walsh and Brierley supply a variety of articles which we may term *indispensable* to our comfort. The making of elastic fabrics is of modern origin, but it would be difficult to mention any article of commerce that enters so largely into our daily requirements as these. Even the much-maligned crinoline, which *we* are gallant enough to own is becoming to the female figure, can be proved without a doubt to have become the rule and not the exception of feminine attire, owing to its many advantages, and we are not surprised to hear that Messrs. Walsh and Brierley have had *one hundred and seventeen* looms continually at work upon crinolines alone, not only for our fair countrywomen, but for exportation abroad.

The increase of business at these works has led to many alterations and additions, until this manufactory is become one of the largest of the kind in the kingdom. The buildings cover three thousand yards of ground, and upwards of two hundred workmen are employed within them, with steam facilities of 30-horse power. The business was established in 1848, and has grown in importance every year. Messrs. Walsh and Brierley manufacture largely for exportation, especially to China, and have branch establishments at No. 58, Aldermanbury, London, and No. 5, Hutchinson-street, Glasgow.

The materials used are of the very best quality of thread and horse-hair. The proprietors are manufacturers of *belts* of every kind of fancy leather and elastic web. In the Web Brace Department the visitor will see thousands of dozens of braces of every description of quality, suitable for prince or peasant. We may also add that a large trade is carried on in Stay and Gusset Web and General small Wares. Messrs. Walsh and Brierley have been the architects of their own fortunes



and reputation, and have kept pace with the growing wants and tastes for novelty of the public. They have wisely trusted to their own resources of industry and perseverance, and are deriving the benefits of such independence. The looms employed by the firm are manufactured on the premises, and every department of the business is admirably superintended.

The new premises, of which we give an illustration, are well adapted to the requirements of the manufactory. The large WEAVING SHED is 156 feet long by 109 feet broad.

THE WHITE SWAN HOTEL, conducted by Miss S. Dixon, is *the hotel* of all others that we would recommend to our friends, having personally experienced the comfort and luxury of its hospitable quarters. This hotel was erected a few years ago, and the furniture and decorations have a fresh and attractive appearance. The traveller may depend upon good cheer, and a most courteous reception.

One of the most widely-circulating press mediums in Halifax is the *Guardian*, established in 1858, and occupying a high position among the newspapers published in the provinces. The articles, whether on politics or social subjects generally, are written with great care and judgment.

THE COMMERCIAL ASPECT OF SOWERBY BRIDGE.

MR. JAMES FIELDING, DRYSALTER AND MANUFACTURING CHEMIST, MEARCLOUGH MILLS, SOWERBY BRIDGE.

The traveller on the Lancashire and Yorkshire Railways, on approaching Sowerby Bridge from Halifax, will perceive, on the right, the MEARCLOUGH MILLS, which are commandingly situated on the banks of the Calder, one being four stories in height, and the other five stories.

A drysalter, as our readers, no doubt, are well aware, occupies an important position in the commercial world, as a wholesale dealer in all sorts of colours for dyers' use, as indigos, cochineal, alum, galls, &c. It is necessary that he should be well acquainted with the nature of dyeware, and the various uses to which they are applied.

The first object on entering the manufacturing premises is the STILL HOUSE, for distilling woods. The Engine House is very fine. On

the right of these buildings is the private residence of Mr. Fielding, the proprietor. The south part of these premises is employed as a flour grinding mill, occupied by the Sowerby Bridge District Flour Society, established by Mr. Fielding, six years ago, in 4,000 shares at £1 each; and such has been the success of this well-managed co-operative society that upwards of fifteen thousand pounds have been divided amongst the shareholders in shape of profits.

As the spectator stands on the elegant iron bridge connecting the two portions of the works, he will have a pleasing view on either side of the Calder.

As we might expect, an enormous quantity of dyewood is required for the purposes of this manufacture, and the visitor will perceive enormous stocks in the YARDS, of wood of the most substantial quality, from St. Domingo, Cuba, Honduras. Logwood, which is one of the principal resources of the drysalter, was first introduced into England in the reign of Elizabeth; but as it afforded to the unskilful dyer of her time a fugitive colour, it was not only prohibited from being used, under severe penalties, but was ordered to be burned wherever found, by a law passed in the 23rd year of her reign. The same prejudice existed, and the same law was enacted, against indigo. At length, after a century of absurd prohibition, these two most valuable tinctatorial matters were allowed to be used.

The CHEMICAL WORKS belonging to Mr. Fielding are at NORLAND, about a mile from the Mearclough Mills. At this place nitric acids and hydrochloric acids, and other materials for dyeing purposes, are manufactured.

MESSRS. TIMOTHY BATES AND CO., ENGINEERS, MILLWRIGHTS, ETC.

These works were established in 1780, at Sowerby Bridge, two miles from Halifax. The manufacturing operations are on an extensive scale, consisting of foundry work of every description. The number of persons employed is 150, and the machinery is worked by steam of 50-horse power. A walk throughout these premises, when they are animated by the labour of a busy throng of workmen, will present many striking features of interest to the traveller. The processes adopted are much the same as in other large foundries, and are greatly facilitated by the valuable and ingenious machinery that meets the eye

on all sides. The TURNING SHOP is a spacious apartment, fitted with boring, turning, planing, and cylinder-boring machines. There are also machines for boring and turning piston-work, and air-pump boring machines. The SMITHY is a scene for a painter, with its eight large furnaces, and the swarthy workmen moving amongst them, wielding ponderous hammers, and manipulating masses of iron with as much ease as we should handle laths.

Messrs. Timothy Bates and Co. are large manufacturers of IRON WATER-WHEELS. At the time of our visit to these works (February, 1861), we saw one in progress 36 feet in diameter. In addition to the departments already mentioned, there are many others, such as CARPENTERS' SHOPS, DRAWING OFFICES, STORES, &c. &c.

Quitting Halifax, and returning to KNOTTINGLEY, we now resume our course on the

MAIN LINE TO YORK.

Knottingley is a chapelry in the parish of Pontefract, from which it is distant about two miles and a half. It is pleasantly situated on the northern bank of the river Aire, and is intersected by the Knottingley and Goole Canal. The excellent lime quarries here are productive of many advantages.

Close to Knottingley, on the right, is *Ferrybridge*, formerly an important posting station. Near this is Byrom Hall. Three miles and a half from Knottingley, we reach BURTON SALMON STATION, which lies one mile north-west of Monkfriston, the parish to which it belongs. On the left of the line are Ledstone Park and Kippax Park. We next stop at SHERBURN STATION. The name of this town appears to be of Saxon derivation, from *scire*, clear or pure, and *burn*, a spring or fountain. It was anciently a place of importance, having possessed a palace belonging to King Athelstan. The Archbishop of York had formerly a residence here. During the Civil Wars, Sherburn was the scene of a remarkable conflict between Lord Digby and Colonel Copley. The vicinity of the town abounds in fine orchards; flax is also cultivated; teasel also forms a prominent article of trade. Near Sherburn is a valuable stone quarry. The *Church* is a spacious and handsome structure, the nave presenting a rare and beautiful specimen of ancient architecture. Two miles and a quarter beyond Sherburn we reach

CHURCH FENTON STATION, and within a short distance ULLESKELFE STATION. The town is two miles south-west of *Tadcaster*, and it is intersected by the *York and North Midland Railway*, which has a Station here about eight miles from York. The railway between York and its junction with the Leeds Railway, after being carried across the Wharfe by a narrow viaduct of nine arches, 274 feet in length, runs across the village green. Two miles west is Grimston Hall, the seat of Lord Londesborough. On the right of the line are Bolton-lodge and *Nun Appleton*, so called from a nunnery which anciently stood here, on the site of which the present mansion was built by Thomas, Lord Fairfax, the Parliamentary General, some of whose ancestors were buried in the church of Bolton Percy. Four miles distant from Ulleskelfe, on the right, is *Cawood*, a small market town on the Ouse, where was formerly a magnificent palace, one of the chief residences of the Archbishops of York. It was at Cawood that Cardinal Wolsey was arrested, on the charge of high treason, shortly before his death. After crossing the river Wharfe, we arrive at BOLTON PERCY STATION, one mile and three quarters from Ulleskelfe. This place is chiefly famed for its noble church, in which are several interesting monuments of the Fairfax family. This edifice was built in 1423 by Thomas Parker, the rector.

Four miles from Bolton Percy, we reach COPMANTHORPE STATION. Copmanthorpe Moor is intersected by the *York and Derby Railway*. On the right is *Bishopsthorpe*, the palace of the Archbishop of York; and *Osbaldwick*, a parish within the liberty of St. Peter, of York. Four miles from Copmanthorpe, we reach YORK STATION, and are ushered from thence into one of *the most ancient and interesting cities in the world*, fully described in our COMPANION VOLUME TO THE PRESENT GUIDE, AND ILLUSTRATIVE OF THE

NORTH-EASTERN AND OTHER RAILWAYS.

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THE OFFICIAL
ILLUSTRATED GUIDE
TO THE
NORTH-EASTERN; NORTH BRITISH;
EDINBURGH & GLASGOW; SCOTTISH CENTRAL;
EDINBURGH, PERTH, AND DUNDEE;
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By GEORGE MEASOM,

AUTHOR OF THE OFFICIAL ILLUSTRATED GUIDES TO THE NORTH-WESTERN; GREAT WESTERN; WEST MIDLAND; BRISTOL AND EXETER, NORTH AND SOUTH DEVON, CORNWALL, AND SOUTH WALES; BRIGHTON; SOUTH-WESTERN; SOUTH-EASTERN; LANCASTER AND CARLISLE, CALEDONIAN, EDINBURGH AND GLASGOW; AND NORTHERN OF FRANCE RAILWAYS.

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NORTH-EASTERN; NORTH BRITISH; EDINBURGH AND GLASGOW; SCOTTISH CENTRAL; EDINBURGH, PERTH, AND DUNDEE; SCOTTISH NORTH-EASTERN; AND GREAT NORTH OF SCOTLAND RAILWAYS,

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PREFACE.

THE GUIDE now submitted to the public, describes a considerable portion of the most interesting localities in the North of England and Scotland, included in the iron routes of the NORTH-EASTERN, NORTH BRITISH, EDINBURGH AND GLASGOW, EDINBURGH, PERTH, AND DUNDEE, SCOTTISH NORTH-EASTERN, AND GREAT NORTH OF SCOTLAND RAILWAYS.

We have endeavoured to be faithful chroniclers of the attractive objects that crowd upon the traveller's attention on these journeys; and although we have oftentimes been obliged, from want of space, to pass by, briefly, many important places, we trust that our friends will find the present Guide a useful companion.

We acknowledge gratefully our obligations to the Railway Officials on the various lines, for the valuable information afforded to us. We are also indebted to the proprietors of several excellent works of reference, viz., "The Land we Live in;" Chambers's "Picture of Scotland;" the "Handbooks" of Messrs. James Murray and Son, of Glasgow; and the "Guides," written by Alexander Ramsay, Esq., of the "Journal" Office, Banff.

The notices of MERCANTILE and MANUFACTURING firms in this Guide have been written from personal survey, and their correctness may be relied upon. These descriptions embrace several extensive and important branches of commerce, and cannot, therefore, but be interesting.

THE AUTHOR.
(From a photograph.)

Any errors or omissions in the present volume will receive due attention in a future edition, and our friends are requested to inform us of such blemishes and deficiencies.

A new Edition of this work will be issued in June, 1862, and communications respecting the NEW EDITIONS may be addressed to the Author, at his private residence, St. Margaret's Lodge, Ailsa Park, Twickenham, S.W.

Offices:—74, CHARRINGTON-STREET, ST. PANCRAS, N.W.

June, 1861.

THE OFFICIAL
ILLUSTRATED GUIDE

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NORTH EASTERN; NORTH BRITISH; EDINBURGH AND GLASGOW; SCOTTISH CENTRAL; EDINBURGH, PERTH, AND DUNDEE; SCOTTISH NORTH EASTERN;

AND

GREAT NORTH OF SCOTLAND RAILWAYS.

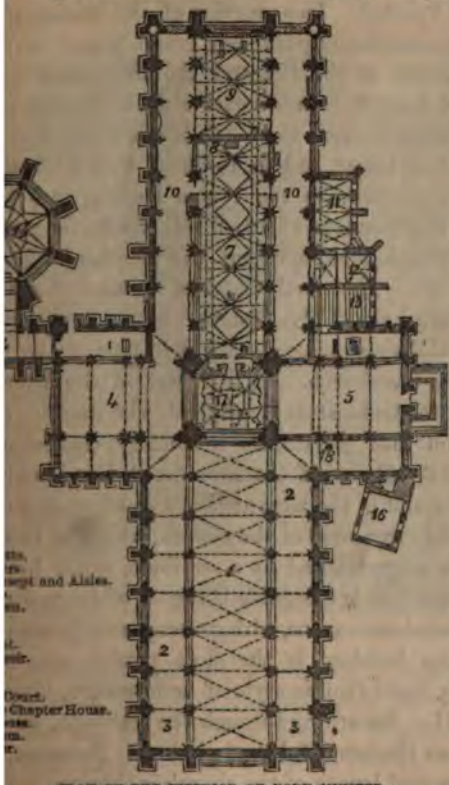
No traveller can visit the ancient and interesting city of York, without feeling impressed with the grandeur of its renowned Minster, founded by Edwin, the fifth Saxon King of Northumbria, who, on Easter day, in the year 627, was baptized by Paulinus in the Church of St. Peter, which, says Beda, he had hastily constructed of wood, while he was a catechumen, and preparing to receive baptism. Soon afterwards the king made preparations for building a larger and nobler church; but at the commencement of the work he was slain. In 642 it was completed by Oswald, a zealous Christian king; but on his death it fell into ruins. After being restored by Archbishop Wilfred, it was, in 741, totally destroyed by fire. A new fabric was erected by Archbishop Albert, from the description of which, by Alcuin, we are led to believe that it was one of the most magnificent of the Anglo-Saxon churches. A small, but very interesting portion of this edifice, comprising a part of the earlier church built by Edwin, was brought to light during the excavation of the present choir. After the calamitous fire in 1029, Archbishop Thomas raised a new church, but it was partly

destroyed by fire in 1137; after which Archbishop Roger undertook various repairs, alterations, and additions: thus, in 1171, the choir was restored. The present South Transept was begun by Archbishop Grey in 1220. The rebuilding of the North Transept, it is thought, was begun by the same prelate; but not completed until several years after his death. There are no documents in existence relating to the building of the Chapter House; still it is conjectured that the foundation-stone of this beautiful and unrivalled structure was laid in the year 1284, but that the work was not finished before 1340. The present nave was begun in the year 1291, in the episcopate of John le Romain, but not finished till 1360, in the episcopate of Thoresby, by whom the present choir was begun, but not completed before 1472. About that time the central, or lantern tower, was finished; and very shortly afterwards the upper story of the north-west tower,—the south-western tower having been finished, probably, about thirty years earlier.

INTERIOR OF YORK MINSTER.—TRANSEPT, LOOKING NORTH.

This magnificent Cathedral is cruciform; measuring in length, from

base of buttresses east and west, about 549 feet; and from ase of the transepts, 249 feet. The internal length east and 83 feet; of the transepts, 222 feet 6 inches. The church con- a nave, with side aisles; a choir, with side aisles; a Lady large central tower; two bell towers; and a chapter-house, with its vestibule. Offices are attached to the south side. The internal height of the nave is 93 feet; of the choir, 101 feet; of the central tower, externally, about 198 feet; internally, 182 feet 6 inches. The height of the western towers is about 201 feet to the top of the pinnacles; 178 feet 3 inches to the top of the battlement. The chapter-house is a noble room, of an octagonal form; the angular diameter being 60 feet 6 inches, and the height of the central base from the



PLAN OF THE INTERIOR OF YORK MINSTER.

feet 2 inches. This is unsupported by any pillar.

a remarkable circumstance in the history of this magnificent hat two of the principal portions of it have, within the space years, been destroyed by fire: the middle aisle of the choir adman, Jonathan Martin (brother of the celebrated painter of e), in 1829; and the south-western bell-tower, with its fine

peal of bells, and the middle aisle of the nave, through carelessness, i 1840. On both occasions the grand central tower prevented the flame from spreading to the transepts.

Supposing the visitor to enter the Minster at the south doors, he wi find himself in the south transept, the architectural style of whic belongs to the Early Pointed. This portion of the edifice consists o three aisles, the centre one being peculiarly grand, from its great width The large circular window at the top, and the three middle windows are very brilliant with colours. In the east aisle is the tomb of Arch bishop de Grey. Passing towards the north transept, we find ourselve under the great central tower, and in front of the celebrated ston screen, with an arched doorway in the centre leading into the choir Nothing can surpass the gorgeous effect of this wonderful work of art The statues in the fifteen niches represent the English kings, from th Conqueror to Henry VI. The north transept contains the five lanc windows, popularly called the "Five Sisters," from a tradition that th patterns of the several divisions were wrought in tapestry by five siste nuns, and presented to the church. In this part of the Minster ther is a fine monument to Archbishop Grenefield, who died in 1315. I was behind this tomb that Martin, the incendiary, concealed himself There are monumental effigies of the munificent Dr. Beckwith, an Archbishop Harcourt; and in the west aisle is a small monument to th memory of John Haxby, treasurer of the church, who died in 1424.

The *Chapter House* is approached by a vestibule, which branches of from the north transept. It is a regular octagon, of large dimensions having canopied stalls for the canons, with grotesque sculptures. It ha been thought that this building is the most perfect specimen now remaining of the early florid Gothic style of architecture, introduced i the reign of Henry III. Returning through the vestibule, we enter th nave, and have before us the beautiful west window. The most imposing view of the whole nave and length of the church is obtained by standing near the west doors, and then, by walking up the middle of the aisle, the interior of the great tower, and the details of the stone screen, become visible. The organ on the top of the latter has 80 stops and 8,000 pipes, and was built in 1837. The interior of the choir, with its immense east window, altar screen, little transepts, pulpit, throne, and tabernacle *carvings* over the stalls, is exceedingly fine. The stalls are twenty in

ber on each side. The east window has been called the "wonder of world," both for masonry and glazing. It contains 117 partitions, esenting so much of Holy Writ, that it almost includes the whole ry of the Bible. From the gallery which runs across the window t midway, the best view is to be obtained of the whole interior of athedral.

THE WEST FRONT OF YORK MINSTER.

he *Lady Chapel*, behind the altar-screen, contains numerous monu-ts, chiefly of the Archbishops of York, many of which are of great ty; also the tombs of the Earl of Strafford (son of the famous ster of Charles I.), Earl of Carlisle (1684), Dr. Dealtry (1773), Sir rge Saville (1784), Countess of Cumberland (1643), &c. From the y Chapel, the visitor can descend into the crypt, in which the site of e altars are visible. It has four aisles, from east to west, each con-ng of three arches, supported by short columns. The vestries are worth attention, containing many curious relics of former days, cially the ivory horn given to the cathedral by Ulphus, Prince of a, in 1036, as a conveyance of all his lands and revenues. The

church, at the present time, holds considerable property by the evidence of this relic.

The *Archiepiscopal Palace* was anciently on the north side of the cathedral, but the building, which has been altered and repaired, is now used as the Library of the Dean and Chapter. Near it is the *New Deanery*. The house for the Canons Residentiary is on the north side of the Minster.

THE DEANERY, YORK MINSTER.
(*From a photograph by Poulton.*)

On leaving the Cathedral, and proceeding down Little Stonegate, we observe *St. Helen's Church*, one of the most beautiful in York, and near to it, the *Museum of Natural History and Antiquities*.

In the time of Henry V. there were upwards of forty parish churches standing, and fifteen chapels. Two of the latter now remain, and twenty-three of the churches. Some of these are architecturally interesting, as that of *St. Dionis or Denis*, *St. Lawrence*, *St. Margaret* and *St. Mary, Bishophill the Younger*; and several of them contain besides some interesting monuments, mutilated remains of stained and painted glass.

There are several places of worship belonging to Dissenters and Roman Catholics.

Our space will but barely permit us to mention a few of the principal iquities of York. We purposely avoid giving anything like a l description of this important city, because a *good Illustrated ndbook to York* has just been issued by Mr. SAMPSON, of Coney-eet. No visitor to York should leave the city without calling here, l obtaining views of the Minster, &c., as *souvenirs* of his visit to this nerable and beautiful city. Fifty years ago every street in York

BOOTHAM BAR, YORK.

orded some interesting specimen of the domestic architecture of the teenth and seventeenth centuries; but these have almost entirely appeared, the overhanging and richly ornamented fronts having given

place to plain unornamented brickwork. The *Castle* and *Fortifications* are highly interesting. The former has long since been converted into the *County Prison* and the *Courts of Justice* for the county; but some portions of the old work, besides the noble keep, are still remaining: this, known as CLIFFORD'S TOWER, is generally supposed to have been built at the period of the Conquest, but the architecture indicates a somewhat later age. York, from its foundation, has never ceased to

BOOTHAM BAR, YORK.

have the appearance of a fortified city; the walls of the Roman Station Eboracum were wholly on the north bank of the Ouse. In the time of the Conqueror they enclosed two castles. In the architecture of the walls, which have been so often repaired and rebuilt, there is nothing characteristic of any particular age; but the archways of the gates appear to belong to the Norman period. The extent of the walls is about two miles and a half; a very considerable portion of these is accessible to the public, and, having lately been put into a state of *complete* repair, they form a very pleasant and interesting walk. There

are four principal gates or bars, as they are usually called, and five postern gates. Two new entrances through the ramparts have recently been formed; one of them exclusively for the railway to the Station. The *Guildhall*, erected in 1446, contains some large windows, with stained glass; the roof is of oak, decorated with numerous grotesque figures.

MICKLEGATE, YORK.

The *Manor House*, now the *Wilberforce School for the Blind*, is the principal private mansion, connected with the history of the city, now standing. The celebrated Earl of Strafford inhabited it for some time, and his arms quartered with those of the royal family (which formed an article in the indictment against him) may be seen over the entrance. In the *Museum of the Yorkshire Philosophical Society*, a handsome building, the visitor will see a vast collection of curious and interesting

objects connected with antiquity and science. In the grounds are preserved a Roman multangular tower, believed to be an angle of the wall of the ancient Eboracum; also a portion of the ruins of St. Mary's Abbey, a monastic building of great antiquity and importance. The

RUINS OF ST. MARY'S ABBEY.

cloisters of St. Leonard's Hospital, founded in 936, are within the entrance to these gardens. Adjoining are the remains of a beautiful small chapel.

The more modern edifices of a public character in York are the *County Asylum, St. Peter's Collegiate School, Theatre, Assembly Rooms, Mansion House, County Hospital, Charities, Schools, Markets,* &c. &c.

The road to *Bishopsthorpe,* the residence of the Archbishops of York, is below the City Gaol. A large portion of the stone used in the erection of the present buildings was brought from Cawood Castle. The interior of the mansion is enriched with many valuable paintings. The Palace, pleasure-grounds, &c., may be seen on application to the principal housekeeper. York was governed by a Mayor as early as the time of Stephen. Richard II. conferred on this dignitary the additional title of "Lord," which is still retained. The population of the city *was returned* at the census of 1861 at 40,151, against 36,302 in 1851.

We may add, for the information of the visitor, that the Museum is open from 10 to 4; the Cathedral from 9 to 5, morning prayers at 10 o'clock, evening prayers at 4. There are two Public News-rooms in the city, to which strangers are introduced by members, in addition to the large News-rooms at Mr. Sampson's, Coney-street.

There are but few towns of magnitude or importance in Yorkshire but what may now, either directly or indirectly, be approached by the rail. The West Riding, more especially, is widely and abundantly furnished with this grand auxiliary to its commerce. We can only name the chief lines and the principal collateral branches, with some of the large towns lying on their routes. The Lancashire and Yorkshire Railway enters the county from Todmorden, on the verge of Lancashire, and by a circuitous route passes the towns of Halifax, Bradford, Huddersfield, Dewsbury, Wakefield, Normanton (station), and Leeds; the last-named has a branch to Ripon and Thirsk, and another to Bradford and Skipton. The Manchester, Sheffield, and Lincolnshire Railway opens a direct communication between the counties of Lancashire and Lincoln, and the Humber, and by that river to Hull, and other parts of Yorkshire. The York and North Midland has branches to numerous towns, including York, Tadcaster, Wetherby, Knaresborough, and Harrogate on the one hand, and Pocklington, Market Weighton, &c., on the other. From Normanton, on the Midland Railway, are lines diverging to Pontefract, Knottingley, Snaith, and the port of Goole, likewise to Wakefield.

From Swinton Station, on the Midland, a line has also been opened to Doncaster, and another from the latter town to Pontefract. The Leeds and Selby, and the Hull and Selby Railways, are, as their designations imply, connected with the towns so named. The York and Newcastle Railway runs to Easingwold, Thirsk, and Northallerton, with branches to Boroughbridge, Ripon, Bedale, and Richmond. This line falls into the Newcastle and Berwick Railway, which, in its turn, unites with the North British, the latter proceeding forward to Edinburgh; and thus the great chain of rail communication is perfected between the northern and southern points of the island, and the capitals of England and Scotland. Every chief town on the east coast of Yorkshire may now be approached by rail; Hull, Bridlington, and Flamborough, Scarborough and Whitby, being now accessible by

this rapid mode of conveyance. The Northern Counties Union Railway effects a communication between the York and Newcastle Line and that of the Lancaster and Carlisle, and the North-Western runs into the latter, with a branch to Lancaster.

York, the ancient *Eboracum*, is a prolific field for Roman remains; wherever any part of the city is penetrated far below the surface, some mementos of Roman occupation are found. Latterly, in making some excavations near Monk Bar, a portion of the ancient Roman city wall was discovered, and more recently, in digging for the foundation of a house on the Mount, some interesting remains were found, the southern suburb having been that part of the city in which the Romans interred their dead. Among the antiquities found were various articles of pottery, which may be seen in the Museum of the Yorkshire Philosophical Society; also a tablet of gritstone, dedicated to Cornelia Optata, a girl of 13 years, by her father.

THE COMMERCIAL ASPECT OF YORK.

York was anciently a port, and, as such, furnished in 1298 one vessel to the fleet of Edward I. The tide, however, does not now rise so far as the city. Its trade was anciently very considerable. In 1354 it obtained the staple for wool, and the woollen manufacture flourished here so late as the reign of Henry VIII., and, indeed, until the commencement of the 18th century, when this branch of trade removed to the West Riding. The manufactures are now of small importance. Glass, carpets, red and white lead, linens, and ironmongery, are manufactured to a moderate extent. One of the principal establishments in York is that of

Mr. William Walker, Victoria Foundry, Walmgate, Parish of St. Denis, Iron and Brass Founder, and Whitesmith, etc., by special appointment to Her Majesty the Queen.

This business was established about half a century ago, and has steadily increased, until it has become one of considerable importance. Upwards of a hundred workmen are employed on the premises, with powerful steam facilities.

Entering from Walmgate, we pass by the warehouses to the offices

VICTORIA FOUNDRY, THE PROPERTY OF MR. W. WALKER.

on our left. Before us is a large yard, at the end of which is the FOUNDRY or MOULDING SHOP. The whole of the left side of the yard is devoted to a Smithy, 123 feet in length, with 18 fires and 40 pairs of vices, where the whitesmiths' work is carried on. Over the northern portion are the MODEL MAKERS' SHOPS. In the large yard also are the FITTING SHOPS and sheds for iron punching, shearing and grinding, having lathes, drilling, screwing and boring machines. This part of the premises is terminated by the engine and boiler house, fetlers' and other shops.

The Foundry is 80 feet in length by 40 feet in breadth; it contains two large furnaces and two powerful cranes. In this foundry the BRASS CASTING is also done, a branch of business for which this house is famous. We may mention that on the north side of the Foundry the visitor will perceive the large hot stoves for baking "cores" (the interior part of any hollow body, &c.; thus the mould occupying the centre upon which a hollow iron column is cast, is termed the core). Behind the Foundry are the sheds covering the furnaces blown by blasts of air. The whole of the Foundry is bounded on the north by the river Foss.

The arrangements for casting in brass are very similar to those preparatory to other kinds of casting. There must first be prepared a model, representing the form and size of the object to be produced; which model depends for its beauty on the taste of the draughtsman who prepared the original design.

The moulding or casting is effected in sand of a peculiar quality, which has a reverse or cavity depressed in it by the pattern, such as to constitute an exact mould of the object. The brass is brought to a liquid state in adjoining furnaces, and is poured into these sand moulds, where it solidifies on cooling. The casting is, in fact, exactly analogous to that exhibited in the iron-foundry, but with the important addition that a very much higher degree of care is required in every part of the operation, both in the fusion of the metal and in the preparation of the mould.

There are various ways of imparting to articles made of brass or of bronze an external beauty of finish which the metal in the original state would not present. Some articles of bronze have an artificial "verde antique" or old green tint imparted to them, by a composition applied to the surface after casting.

Brass-work is brought to a brilliant yellow appearance by the process of lacquering; a process now conducted so skilfully that the lacquered article presents a very close resemblance to those which have been gilt.

ELABORATE AND ORNAMENTAL GATES are manufactured by Mr. Walker, and as specimens of admirable workmanship we may mention the *entrance gates to the Royal Kew Gardens*, likewise the massive and rich palisading and gates in front of the *British Museum*, London, which are justly considered masterpieces of this particular art, not only by our own countrymen, but by strangers from all parts of the globe.

Ornamental gates of a similar kind have been supplied by Mr. Walker to the Duke of Northumberland and Lord Ashburton; also for Lord Londesborough, and others of the nobility and gentry. Mr. Walker has received Prize Medals at several exhibitions for his IRON RAILINGS, FENCING, and KITCHEN RANGES.

The SHOW ROOMS occupy a considerable portion of the front premises in Walmgate. An immense quantity of useful and decorative articles will be seen here, including Iron and Brass Bedsteads and Children's Cots, Cooking Ranges, Stoves, Fenders, and Iron Fencing; a branch of manufacture for which Mr. Walker enjoys a great reputation. Mr. Walker is also an Engineer and erector of Hot-Water Apparatus for heating Churches, Chapels, Conservatories, Hot-houses, &c. A considerable number of public buildings and conservatories belonging to noblemen and private gentlemen throughout the country have been supplied with this apparatus by him. We may add that Mr. Walker had the honour of receiving instructions from the English Ambassador at the Court of the Maharaja Holkar, Indore, in Central India, for a large quantity of magnificent Iron Palisading, with massive gates, for enclosing the grounds surrounding the burial-place of the late Ranee, or Queen, Naha Sahib, widow of the celebrated Juswent Row Holkar, who gave our armies, under Lord Lake, so much trouble. This work was executed with a degree of skill that reflects great credit upon the above Iron Foundry.

We must now quit York, and request the reader to accompany us,

while we retrace our railway route to MILFORD JUNCTION, from which the line on the left conducts us to LEEDS, which we have described in OUR COMPANION VOLUME; that on the right to

SELBY AND HULL,

the distance to the former place being eight miles and a half, passing by HAMBLETON STATION. SELBY is situated on the western bank of the Ouse, and is a well-built, prosperous-looking town. It contains a handsome Gothic Market-cross, and a neat Town-hall. The parish church, the conventual church of a Benedictine abbey, which was founded here in 1069, is all that now remains of a pile of buildings once amongst the most stupendous and magnificent in the kingdom. Vessels of considerable burthen come up to Selby, and steamers ply constantly to and from Hull. There is a curiously constructed timber bridge over the Ouse. A new branch of the North-Eastern Railway from Selby to Doncaster will be open in 1862.

From Selby there is a BRANCH LINE TO MARKET WEIGHTON, seventeen miles and a quarter in length. A considerable trade is carried on at this latter place by means of a canal, which communicates with the Humber. The distance from Market Weighton to York by railway is 23 miles. At HOLME STATION, five miles and a quarter from Market Weighton on this line, the visitor can spend a few hours agreeably. Near Holme is *Spalding Moor*, on which is a remarkable hill, 120 feet high, commanding an extensive prospect. The village is on the plain, but the church is situated on the top of the hill. Near Holme, also, is *Holme Hall*, for several centuries the property of the Constables of Flamborough, who sold it to Sir Marmaduke Langdale, the steady adherent of Charles I. Beyond Holme is *Melbourne Hall*, and two miles distant, *Everingham Hall*—a noble modern mansion, containing a fine portrait of Charles I., by Vandyke. Near the entrance to the grounds is a curious Saxon font.

Returning to Selby, and proceeding on our railway journey to Hull, we reach, three miles distant, CLIFF STATION, near which is *Hemingbrough* and *South Duffield*. Six miles from Cliff, we arrive at

HOWDEN STATION. The town is small, but ancient, containing the remains of a palace that belonged to the Bishops of Durham. The

Church is one of the finest specimens of Gothic architecture in the kingdom, and contains some interesting monuments.

After leaving Howden we pass EASTRINGTON, STADDLETHORPE, BROUGH, FERRIBY, and HESSLE STATIONS, reaching Hull at the distance of thirty miles and three quarters from Selby.

KINGSTON-ON-HULL, in Yorkshire, lies on the north side of the Humber, at the influx of the Hull, 22 miles north-west of the Spurn Head, and 38 south-east of York. The coast of Lincolnshire spreads out for many miles, opposite Hull; but it is flat and uninteresting. The old town, about three quarters of a mile in length, stands on the western side of the river Hull, at its entrance into the Humber, and is enclosed from north to west by three noble docks, crossed by moveable bridges. Beyond these are Myton on the west, Sculcoates on the north, both containing populous quarters of the modern town; and beyond the Hull, on the east, are Sutton and Drypool, with a large citadel occupying the east angle formed by the Hull and Humber. The town, which contains a population of 96,509 in 1861, against 85,502 in 1851, although not striking in its appearance, is well built and tolerably well drained. Before describing the architectural features of Hull, we will glance at the magnificent docks, and an idea of the commercial activity which is busy within them may be gained when we state that London, Liverpool, and Newcastle are the only British ports which take precedence of Hull in the number of vessels despatched therefrom, and that Leith, Glasgow, Greenock, Bristol, and the whole of the Irish ports, are subordinate to Hull in this matter. The nations to which the foreign vessels in the Hull trade mostly belong, are Germany, Denmark, Holland, and Sweden. The chief trade is with Russia, the Hanse Towns, Holland, and the North American colonies; the trade with France is but small. Hull is admirably situated for trade. The Humber is the common outlet by which all the eastern rivers of England, from the Tees to the Trent, discharge their waters into the North Sea. It therefore opens an easy access from Hull eastward to the sea, commanding, at the same time, by its various branches, communications to all parts of the country. The *Docks*, constructed successively since 1775, on the site previously occupied by fortifications, have an aggregate length of 1,087 yards' breadth, varying from 250 to 400 feet, and a total area of 24 acres, besides a basin between two of

the piers on the Humber; these are surrounded by broad quays and large warehouses, have a depth varying at high tides from about 20 to 27 feet, and are crowded with shipping of all nations. The first mention of the port of Hull, in connexion with commerce, is in 1198, when it appears to have been not only a seaport, but also one of the places whence wool, the great native commodity, was allowed to be exported. The merchants of Hull were the first in England who embarked in the whale fishery, in 1598; and after the revival of that trade in 1765, Hull sent more ships to Greenland and Davis' Straits than any other port in the empire, except London. This port is also an important Steam-packet Station; indeed, it may be considered the second great centre of this mode of transit on the eastern coast. Upwards of 20,000 sailors enter the port of Hull in the course of a year; and about 10,000 more are engaged in the navigation of the Humber.

From a local newspaper we learn that consequent on the increasing commerce of the port of Kingston-upon-Hull, it is proposed to construct an extensive dock and basin, with quays, so as to furnish the required accommodation for steam vessels and railways on the foreshore to the westward of the Humber Dock Basin. Lines of railway are to be laid for the convenience of the North-Eastern and Hull and Selby Railways, and there are to be street and approach improvements. It is proposed to expend £500,000, and to borrow £160,000 for the purposes of the undertaking.

During the civil wars, Hull was the first town in the kingdom to shut its gates against the king, and it was, in consequence, besieged by Charles. In this strait, Sir John Hotham, the governor, caused the dykes to be cut, and sluices drawn, and laid the whole neighbourhood under water, and kept the besiegers completely at bay. The Royalists, to retaliate, dug trenches to divert the stream of fresh-water that supplied the town—a means of annoyance to which Hull, from its situation, was always liable.

The public buildings and institutions connected with trade and commerce are the *Custom House*, a large edifice in the centre of the town, built of red brick, with stone quoins and dressings. The *Trinity House* is about a century old. It is a plain brick structure, consisting of buildings surrounding a spacious open court, and adorned with the naval emblems of Neptune, Britannia, &c. The council-room, court-

room, and other apartments, contain a few portraits and a few curiosities; but the chief part of this building is occupied by pensioners. The guild of the Trinity House, which has existed at Hull for nearly five centuries, originally associated for religious purposes and mutual relief, hold their meetings in this building. The *Pilot Office* is a lofty brick building, opposite the Ferry-boat Dock. The *Exchange* holds a respectable rank among the institutions of Hull. Over it is a news-room. The *Market-place* forms part of the public streets. In 1734, a fine equestrian gilded statue of King William III. was erected by subscription, near the south end of this place. The new *Corn Exchange* is situated in the market-place. Besides these buildings, there are the *Dock Office*, *Excise Office*, *Post Office*, *Stamp Office*, *Banks*, &c.

CHURCH OF THE HOLY TRINITY, HULL.

The present church of the *Holy Trinity* is said to be one of the largest parochial edifices in England. It was originally erected in 1285, but was enlarged and improved in the reign of Henry VII. It consists of a nave and aisles, chancel and aisles, transepts, and a noble tower in the centre. In length it is 272 feet from east to west, the nave being 144

feet; the breadth of the nave of the transept under the steeple is 28 feet, and the length of the chancel 100 feet; the breadth of the nave of the church is 172 feet; the length of the transept 96 feet; and the breadth of the chancel 70 feet. This church possesses all the elements of a complete ecclesiastical structure. The east end, visible from the Market-place, exhibits one of the finest and noblest windows which could be found even among our cathedrals. The light, delicate perpendicular work of the western, or nave portion; the fine tracery of the great window of the south transept; the rich decorations of the interior of the chancel, and the numerous interesting monuments placed in different parts of the building, all render this fine church worthy of admiration. This church of the Holy Trinity is often called the *High Church*. *St. Mary's*, the next best church in Hull, is, in like manner, often called the *Low Church*. It is situated a little northward of the former, in the street called Low Gate. It was originally as large and magnificent as Trinity, but it has been shorn of much of its splendour. The structure is rather more than five centuries old, but the nave, the transepts, and the tower all fell down, or were taken down, in early times; the original chancel alone remained: this, in the time of Queen Elizabeth, was converted into a church, and a small new chancel and tower added.

There is a fair average of good-looking churches at Hull, though none, excepting Trinity, which would rivet the attention of the observer. In the centre of the town are the *Mariners' Church*, near the Junction Dock; the *Trinity Chapel*, attached to the Trinity House, and several chapels belonging to the Dissenting bodies; while in the portions of the town which surround this busy centre, are the churches of *St. Peter*, *St. Mark*, *St. Paul*, *St. Stephen*, *St. James*, and others. *Great Thornton-street Dissenting Chapel* is a handsome edifice, in the Grecian style of architecture, consisting of a centre and two wings.

Clowes' Chapel, Primitive Methodist Connexion, Jarratt-street, stands in one of the best situations of the town. It was erected in 1851, at a cost of about £4,300. Upwards of £300 have since been expended in placing an excellent organ in the orchestra. The chapel is capable of accommodating 1,400 adults with seats, 300 of which are free. There is a spacious school-room beneath the chapel, in which 500 children receive gratuitous instruction on Sabbath days. In connexion with the chapel

there are also 12 vestries adapted for various purposes. The chapel derives its title from the late Rev. William Clowes, one of the founders of the community to which the sacred edifice belongs. Four other spacious chapels are occupied by the same denomination in the town of Hull.

CLOWES' CHAPEL, HULL.

The Benevolent Institutions, other than those relating to maritime affairs, are of the usual character. One of them is the *Charter House* or "God's House of Hull." It is a very ancient foundation, and has been the means of doing much good. There are upwards of a dozen hospitals and almshouses in Hull, besides those managed by the Trinity Guild, for the support of decayed and aged persons. The *Lunatic Asylum* is situated near the Anlaby-road. The *Infirmary* is one of the best-looking among the public buildings of the town; in the front court there is a statue of Dr. Alderson, whose name is favourably connected with the medical charities of the place. Among the attractions of Hull, the visitor will find the *Zoological Gardens*, situate

in the Spring Bank. In addition to the menagerie and aviaries, there are numerous objects of interest. The *Botanic Gardens* are on the Anlaby-road, about a mile from the town. There are, also, the Museums of the *Literary and Philosophical Society*, and the *Mechanics' Institute*. The *Hull Royal Institution* is in Albion-street. The *Citadel*, with its old moated fortress, is curious. It contains the barracks and magazines, and stood the sieges during the Civil War.

THE WILBERFORCE COLUMN.

The *Wilberforce Column*, 80 feet high, near the Junction Bridge, was erected in honour of the great anti-slavery advocate, who was a native of Hull, and had the satisfaction of surviving to see the great object of his life accomplished. "Thank God," he exclaimed, "that I have lived to see the day when an English Parliament is willing to give twenty millions to abolish slavery!"

Altogether Hull presents many features of interest which may well detain the tourist a few hours, and engage his attention. Railway communications have made it a place of great resort.

THE COMMERCIAL ASPECT OF HULL.

Hull is admirably situated for trade. By means of the rivers Hull, Derwent, and Ouse, the Humber communicates with the East and West Ridings of Yorkshire. The Ouse and Calder navigation opens the communication, on the one hand, with the remainder of the West Riding, the seat of the woollen manufactures; while, on the other hand, the same navigation communicates with Lancashire, the centre of the vast cotton manufactures, including Liverpool. Then, again, the Trent affords access to the great stocking district of Nottingham, the mining and mineral district of Derbyshire, the potteries and coal of Staffordshire, and the whole course of the Severn to Bristol; and by means of intermediate branches, still further communication is opened with Derbyshire and Sheffield. The eastern waters, which finally unite in the Humber, by the assistance of the subsidiary streams, which extend to the west, the north, and the south, collect the various products of the districts through which they pass, and depositing them at Hull, bear back in return the merchandise

which has been drawn to that port by its great trade with foreign parts. When we add to these advantages the railway communications to all parts of the kingdom, we may safely say that Hull cannot but increase in its commercial prosperity. Ship-building is extensively carried on at Hull, and iron boat-building. Ropes, sail-cloth, &c., are manufactured; also chain-cables, and the general iron-work of foundries; white lead, tar, and turpentine. There are tan-yards, potteries, breweries, &c. In the following notices, our readers will gain some insight into several of the most eminent manufactories.

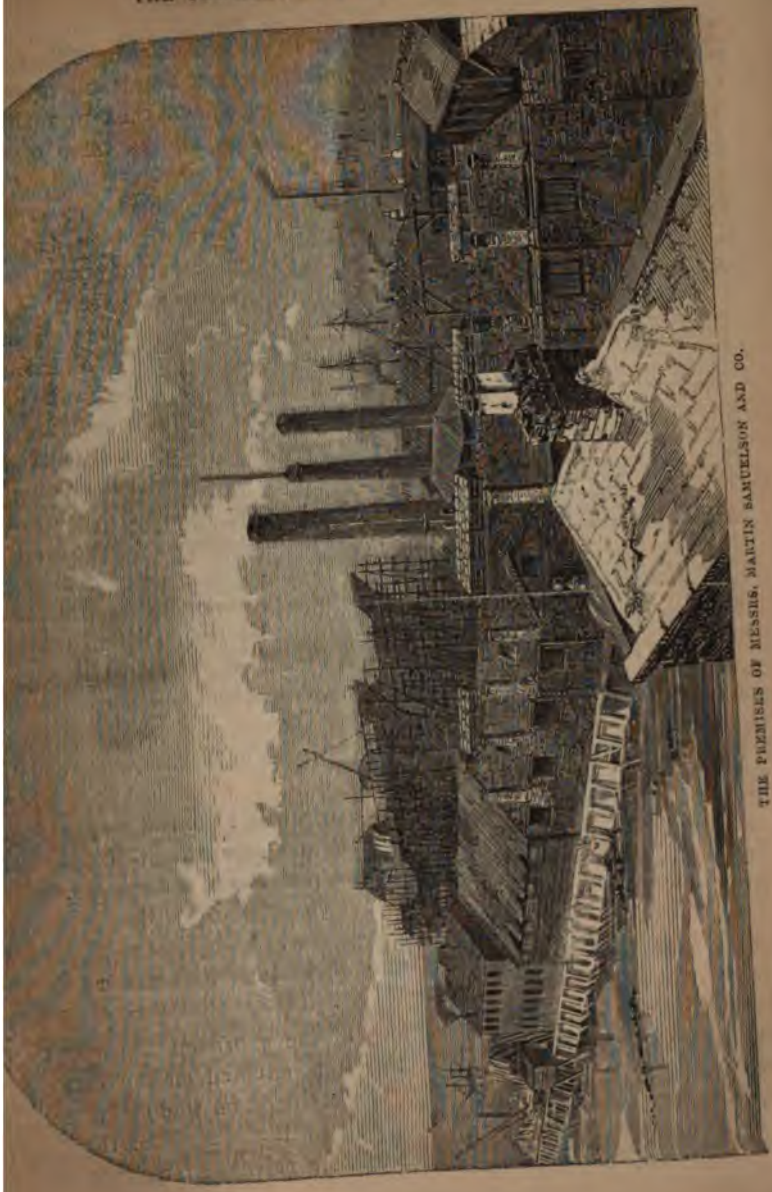
Messrs. Martin Samuelson and Co., Engineers, Millwrights, and Iron Ship Builders.

The foundry belonging to Messrs. Martin Samuelson and Co. is situated in Scott-street. The business was established in 1849 for the purpose of making Blundell's Hydraulic Presses for manufacturing Oil Cake, and extracting oil from seed, in which branch the proprietors obtained much eminence; enjoying, also, an extensive reputation as General Engineers.

In 1854 this firm extended their premises considerably, and added to their already large establishment, Iron Ship-building, since which period (now seven years) they have built and completed *forty-nine steam and sailing vessels*, varying from 250 to 2,300 tons, and are at the present time building two paddle steamers of 3,000 tons and 800-horse power for the Atlantic trade.

The great advantage and importance of Iron Ships has been placed prominently before the public by many eminent scientific men, and by none more experienced than Dr. William Fairbairn. In his "Useful Information for Engineers," this gentleman gives a few particulars respecting the origin of iron vessels. He says:—

"It is nearly thirty years since the construction of *iron ships* for sea-going purposes was first entered upon; and I believe I was the first to show, in conjunction with Messrs. John and McGregor Laird of Birkenhead, the superior strength and security of iron vessels. After a long series of experiments in the construction of different forms and dimensions, it was found that the resisting powers of an iron vessel, when properly constructed, could be depended upon for navigating the open *sea, and was* much better calculated, as respects lightness, capacity for



THE PREMISES OF MESSRS. MARTIN SAMUELSON AND CO.

cargo, &c., than one composed of the best English oak. These considerations induced Messrs. John and McGregor Laird and myself, to commence iron ship-building on a large scale, and thus to realize an expensive and laborious series of experiments on the value of these constructions."

Space will not permit us to describe the various ingenious processes of iron ship-building; but our readers can, during their stay at Hull, obtain permission from Messrs. Martin Samuelson and Co., to visit the departments of the works in which these operations are effected.

The great advantage of these Presses over Stampers consists in the extra amount of seed crushed per day, also the quantity of oil extracted being much above the average. The Stampers are consequently going quite out of date. A pair of presses with the pumps, when fixed, will occupy a space of nine feet by three feet. They are usually placed on a stone landing of this size, to which the Pump Cistern is bolted, as shown on the drawing, and this is all the fixing required. The Presses are so portable that they can be fixed up or removed in two or three days by any ordinary mechanic. The Pumps are made of Gun Metal, and, as well as the Presses, are of first-rate workmanship. A pair of Presses, with the Pumps, will weigh altogether from nine to ten tons. The Pumps are driven from the lever by a connecting rod, at a speed of thirty-six strokes per minute. It requires about one-horse power to work a pair of Presses.

Mr. Martin Samuelson is the senior partner of the firm, and was lately Mayor of Hull.

Altogether the house of Martin Samuelson and Co. is a very extensive and eminent one, and, in its rapid rise and expansion, will bear comparison with any of the eminent houses recorded in these pages.

Messrs. R. and J. Harrison, Timber Merchants.

Our engraving affords some idea of the enormous Timber Yard belonging to Messrs. R. and J. Harrison, situated on the Garrison Side, on the east of the Hull. The stranger, on finding himself on these premises, surrounded on every side with the spoils of the forests *in all quarters* of the globe, might well feel astonished, for it is rare to

find such an immense collection of timber in the possession of private dealers. But we must consider the endless uses to which wood is applied, and the stock required to provide for the wants of shipbuilders, architects, carpenters, &c. The quantity of wood of all kinds imported into Great Britain *annually* is not much less than *ten millions* of cubic feet. The number of woods at present admitted as first-rate for shipbuilding purposes are not more than eight: namely, English oak, live oak, African oak, teak, saul, greenheart, morra, and iron-bark. The number used for the ordinary purposes of the carpenter is very large, for everywhere the strongest, cheapest, or handsomest woods are employed, according to the purposes for which they are required.

At the Great Exhibition of 1851, a very beautiful series of about 160 samples of the most useful and ornamental woods, from various parts of the world, were shown by Messrs R. and J. Harrison. The woods were all cut in the form of books, and exhibited admirably the grain and other peculiarities of each specimen. These gentlemen received a prize medal for this highly valuable collection.

Amongst the fine timber to be seen in the yard of Messrs. J. and R. Harrison's premises, will be found some choice wood from Norway and Sweden, the Prussian dominions, the Gulf of Bothnia, and Finland, besides other countries.

These gentlemen rank among the largest importers of foreign wood, and the consumption is constantly increasing. Under the Customs import duties for 1860 we find (classified according to official arrangement) the following return of this vast supply:—Deals, battens, boards, or other timber or wood sawn or split—*loads*, 1,472,667; entered for home consumption, 1,354,810; computed real value, £4,476,702. *Staves* (not exceeding 72 inches long)—*loads*, 114,881; computed real value, £862,445. Not sawn or split, or otherwise dressed except hewn, and not otherwise charged with duty—*loads*, 1,141,959; entered for home consumption, 1,069,515; computed real value, £3,686,280.

In regard to timber (as in every other article), it is necessary to purchase from the largest and most reputable merchants, for it is of the greatest importance to get thoroughly seasoned wood. Here we may remark that the large capital embarked in business enables the Messrs. Harrison to obtain an immense stock of wood, and thus to give sufficient time and preparation for the "seasoning." This importance is by

THE FUNERAL TRAIN OF GENERAL W. HENRY HARRISON.

no means exaggerated when it is remembered how prone vegetab matter is to decay, *and how much often depends upon the soundness of single plank.* The evils arising from a decay of wood are innumerabl and it is only from the frequency of their occurrence that we are led regard them as almost without a remedy. This is, however, fallaciou for good judges of timber, and those well acquainted with the means preserving it, can always be on their guard against such resul Ingenuity has been directed, in the first instance, to modes of dryi and seasoning woods whereby those matters in it most liable decay are removed, or rendered more stable; and, secondly, to metho of impregnating wood with various substances calculated to preser it from change.

Messrs. R. and J. Harrison have very extensive timber-yards on t Victoria Dock side; they have also premises at Dock Side, cover with stacks of RUSSIAN AND PRUSSIAN DEALS, and most convenient placed for shipping. The train from the North-Eastern Railway ru between these yards and the Victoria Docks. The visitor will rema at the Victoria Docks the large ponds, covering a surface of six acr and filled with floating rafts of timber, &c., the property of this fir The fourth yard is on the side of the Victoria Docks, and here may seen an enormous crane, weighing sixty tons.

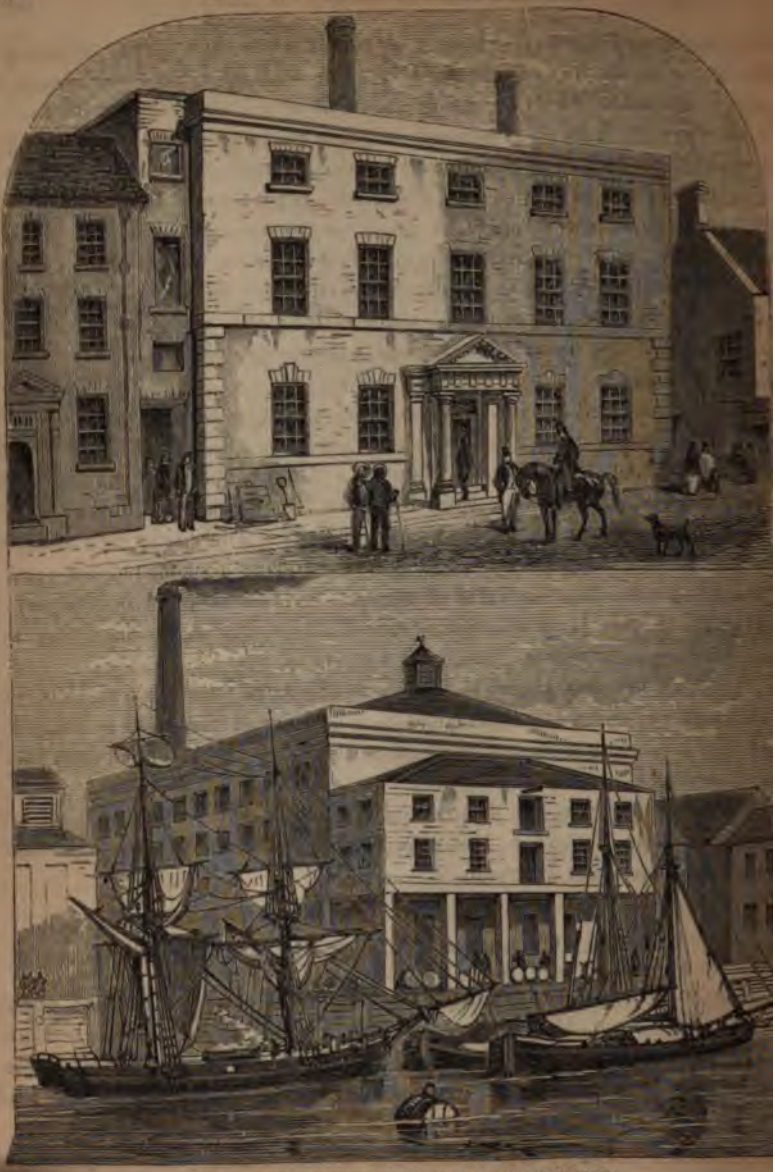
We can promise the visitor to these extensive premises a treat of ordinary character—such as could not be enjoyed elsewhere,—the p of Hull offering such unusual advantages for the establishment o timber business.

We may add that the proprietors of this mercantile establishment Messrs. John Crowther Metcalfe Harrison, Joseph William Harris and Stephen West Harrison.

THE SEED-CRUSHING MILLS OF MR. HENRY HODGE.

These Works are pleasantly situated on the Holderness-road, ab one mile from Hull; there is also a Mill in High-street, H The private residence of the proprietor adjoins the Works in Holderne road, and is a most attractive, commodious building, with a splen conservatory attached to it.

Before entering the Works in Holderness-road, we will briefly desc



THE SEED-CRUSHING MILLS OF MR. HENRY HODGE.

the processes of Seed-crushing, in order that our readers may understand the machinery. This consists of engine, boilers, shafting, presses, pumps, edge-stone, kettles, &c. &c.

The extraction of oil from seeds, such as linseed, hempseed, rapeseed, &c., requires considerable pressure. The mode of obtaining linseed oil from linseed or flaxseed includes many singular processes. When the flax-plants have grown to that stage which imparts to the seed the greatest amount of oleaginous quality, they are pulled, and partially dried in the air; and the capsules which contain the seed are stripped off by a kind of comb, called a ripple. The capsules are dried, thrashed, and winnowed, to separate the seeds from the husks or capsules. The seeds are exceedingly hard and smooth, and require one of two kinds of presses to crush them; one the wedge-press, and the other the hydraulic press. In the former, a wedge is driven very forcibly between two bags of seed: and it is found that the oil is driven out of the seed by this process more readily than by the use of a millstone. But in modern oil-mills the hydraulic press is gradually superseding the wedge press. In preparing the seed for the hydraulic press, the following is the routine of processes. The seed is bruised by two crushing-rollers, so placed, side by side, that the seed, introduced between them from a hopper at the top, becomes crushed by the rotation, and falls into a chest beneath. The seeds are further ground or crushed by ordinary edge-stones, and assume the state of an oily pulp; the pulp is heated and put into oblong flannel bags; these bags are flattened slightly by the hand, and piled one on the other in cast-iron cases, which are placed in the hydraulic presses. The presses are then worked, and the oil speedily begins to ooze from the pulp through the bags. This applies to linseed *once* worked, after which the pulp is taken out of the bags, compressed into a cake, and sold as a valuable *feeding* article, which is much appreciated and extensively used. When as much oil has been obtained as will flow by these means, the press is loosened, the bags removed, and the pressed cake of pulp taken out of each bag; and this cake is ground, re-heated, re-bagged, and re-pressed, to yield more oil. The refuse pulp forms valuable manure, and commands a good price as oil-cake. What is called cold-drawn linseed oil is obtained by pressing the seed immediately after it has been crushed, without any intermediate heating; it is obtained in small quantity, but of very fine

quality. No other kind of vegetable oil requires so heavy a pressure as that procured from flax and similar seeds.

The Mill on Holderness-road contains four double hydraulic presses, two pair edge-stones, and engine of thirty-horse power. The Mill in High-street is a new building, erected in 1858 at a great cost, with a frontage to the river Hull. This Mill contains machinery of the latest improvements, with seven double hydraulic presses, three pair edge-stones, and engine of forty-horse power. Both mills combined are capable of expressing about seventy tons of oil, and making about two hundred tons of linseed cakes per week.

Our engraving represents the Mills and the Offices, No. 6, High-street. The latter are remarkably fine.

Mr. Henry Hodge is an indefatigable man of business, and gives his personal attention to the management of the works. He has been deservedly successful in his commercial pursuits.

Messrs. Gleadow, Dibb, and Co., Anchor Brewery, Ale and Porter Brewers.

The Anchor Brewery, well known to all lovers of the exhilarating hop, throughout the length and breadth of Yorkshire, for upwards of a century past, is situated in Dagger-lane, in the parish of Holy Trinity.

The premises, which are extensive, comprise all the works of a first-rate Brewery of Pale and Mild Ales, and Porter of all kinds; and an immense business is carried on, the proprietors being famous for their Old Ales, and rapidly acquiring a foremost reputation as producers of Bitter Ale. In consequence of the large stock required to be kept for the continuous supply of customers, Messrs. Gleadow, Dibb, and Co. were obliged in 1859 to have new cellars added to their storage. One of these is seventy feet in length by forty feet wide, and is supposed to be the largest of the kind in Hull.

That there is a great increase in the consumption of beer is evident from statistical returns:—

"In 1859 the number of acres under cultivation for hops was 45,665, and the number of pounds charged with duty was 68,496,958. The *total* amount of duty was £599,546, an average of £13 2s. 5¾d. per *acre*. The quantity of British hops exported was 1,353,075 pounds;

THE ANCHOR TAVERN, THE PROPERTY OF MESSRS. CLEADOW, DIXON, AND CO.

the foreign hops imported amounted to 2,219 cwts. 3 qrs. 23 lbs., of which 1,959 cwts. 2 qrs. paid duty for home consumption at £2 5s. per cwt.; and on January 1, 1860, there were 3,555 cwts. in warehouse under bond. This is the fifth year in succession remarkable for the large produce of hops."

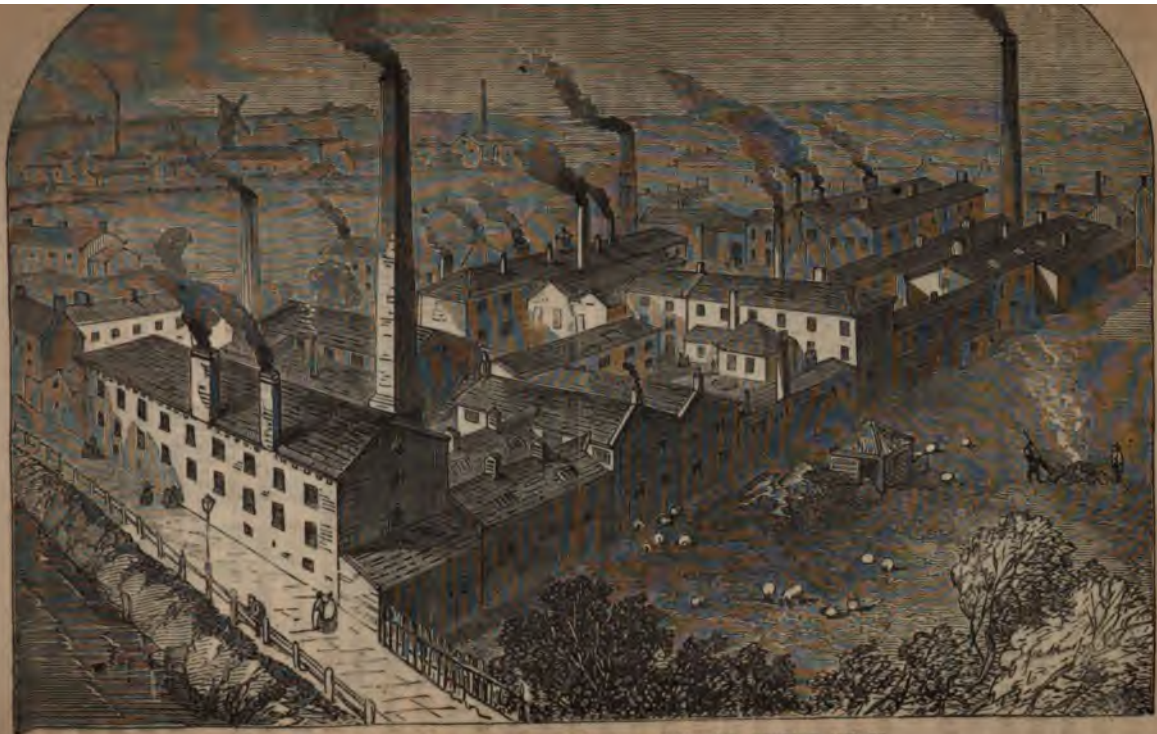
As we enter the premises of the Anchor Brewery, we perceive the Offices on our left; the Store Rooms are on the right, with a passage leading to the Brewhouse. In this latter department the visitor will see at least twenty quarter vats, patent Mashing Machines, &c. A Brewery is an unfailing source of pleasure to a spectator who marks the processes carried on for the first time. The arrangements for storing the malt and hops, the supply of water, the boilers for heating the water and boiling the hops, the "backs" and tuns, the vats and casks, the coolers and other vessels, make together an assemblage which never fails to astonish. The visitor will be shown the Dry Malt House, and the Coppers, each holding 3,000 gallons. Near to this is the Engine Room, the steam in requisition being of eight-horse power. There are many other departments, which space will not permit us to enumerate. Riley's Patent Refrigerator may be seen in a large room adjoining the Hop Chamber. This is used when it is necessary (according to the weather) to pass it through, when the beer is brought into close connexion with cold spring water, thus effecting a rapid reduction of temperature.

Near the Anchor Brewery are the Stables, joined by a Carpenters' Shop and Cooperage; also large Malt Rooms.

Messrs. Gleadow, Dibb, and Co. have large Malt Kilns at Waterhouse-lane, Brook-street, and Barton.

The Kingston Biscuit Works, and Starch, Blue, and Blacklead Manufactory.

We took an early opportunity to visit Messrs. Reckitt and Company's celebrated Biscuit Factory. These works, situated on the east side of the town, were erected a few years back by this enterprising firm, and from their being established in a favourable position, are well adapted to supply (besides the home trade) a large portion of the *Continent* with this growing *necessity*.



THE KINGSTON WORKS, THE PROPERTY OF MESSRS. RECKITT AND CO.

The admirable position of Hull, commanding rivers and canals running into the heart of a dense population, points to it as the natural source of supply for many articles, particularly for all the productions of Germany and the Baltic, with which its commerce is principally identified. It is also as natural to expect that all manufacturers which look to the raw materials of these countries should flourish here on the largest scale.

We were much pleased in our walk through this manufactory, to observe the *cleanliness* with which the operations were conducted, and the almost total disuse of handling, which the substitution of machinery has effected in the art of biscuit-making.

The mixing of the materials—flour, butter, eggs, milk, &c., as the case may be—is completely effected by steam-power. The dough is then kneaded by means of powerful rollers into plastic sheets of the required thickness. It is now passed under a set of cutters, which stamps and imprints the biscuits into the shape desired, cutting out a quantity at every stroke, the scrap or waste dough between the biscuits being ingeniously removed by the same machine, which passes and deposits them upon pans or plates at uniform distances from each other. They finally enter ovens, through which they travel, and are discharged from the opposite end, evenly and beautifully baked. The whole of these operations are accomplished by steam machinery.

Another important branch in the extensive business of Messrs. Reckitt and Company, is the manufacture of Starch, Blue, and Blacklead. Their starch manufacture is supplied by the wheat which, with grain of all kinds, is poured into Hull in immense quantities. Blues (the twin sister of starch), Smalts, and Ultramarines come almost entirely from Germany, as also Blacklead, of which this firm is the principal importer, having the exclusive agency of one of the finest German mines—that producing the Crown No. 1 Æ Blacklead.

In all their various articles, Messrs. Reckitt and Company bring machinery as largely as possible to bear in their manufactures, and it is an interesting sight to see the vast variety of mechanical contrivances employed in the many processes necessary to prepare their goods for sale. The grand principle upon which this firm has worked, and which forms, doubtless, the groundwork of their great success, has been the *bringing of* all their goods within the reach of the humblest consumer

GENERAL VIEW OF THE PREMISES OF MESSRS. RICHARDSON AND SONS.

They have wisely considered that the benefits of useful inventions were not destined to be reaped exclusively by the rich, but that the inmates of the poorest household ought to share, where it is possible, alike. With this object, Messrs. Reckitt and Co. have endeavoured, by the aid of machinery, to lessen, in every way, the cost of production, so that the essential articles of their manufacture might be sold at the lowest possible price.

Messrs. Reckitt and Co. were the inventors of the Crystallized Sago Starch, and are the only manufacturers of that article in Great Britain and Ireland. These gentlemen introduced into England the making of Ultramarine Ball Blues.

MESSRS. RICHARDSON AND SONS, CABINET MAKERS, UNDERTAKERS, UPHOLSTERERS, GILDERS, PLATE GLASS FACTORS, GILT CORNICE AND CHIMNEY GLASS MANUFACTURERS.

The extensive premises of Messrs. Richardson and Sons are situated in Bond-street (Nos. 32, 33, 34, and 35), in the centre of the borough, and in the very heart of what may be termed the West-end. The business was established in 1812, by the late eminent and much respected Mr. Richardson, who was acknowledged to be one of the best cabinet-makers of the day, and whose great ambition was that his sons should excel him (if possible) in this branch of manufactures. It is owing to this circumstance that the Messrs. Richardson have been enabled to sustain the well-merited reputation of their business, having had opportunities of acquiring a practical knowledge of every department of their works, and being enabled, personally, to give to their manufactures that nicety of finish, and perfection of detail, which particularly distinguish their goods.

The first consideration in the purchase of cabinet work, is the *quality of the wood*, and here we are enabled to state, *from personal observation*, that the stock of Mahogany Fancy Woods and Timber is the best that can be procured; and being *obtained from the Importers direct*, enables the manufacturers (at a very great outlay) to dispense with the agency of a wood merchant, and the profit thus saved is shared by their customers, as the furniture is sold at a lower cost in consequence.

The premises of Messrs. Richardson and Sons are unsurpassed by any *other house* in the same business in the United Kingdom. For quantity, *variety*, and richness, the stock bears the palm of excellence over all

GENERAL MUSICAL REPOSITORY AND PIANOFORTE
PIANOFORTE
HARMONIUM J.W.HOLDER PIANOFORTE MUSIC WAREHOUSE J.W.HOLDER WAREHOUSE
PIANOFORTES BY COLLARD AND COLLARD BROADWOOD & SONS AND OTHER EMINENT MAKERS
HARMONIUMS FOR HIRE
PIANOFORTES FOR HIRE
PIANOFORT

THE PIANOFORTE AND HARMONIUM WAREHOUSE OF MR. J. W. HOLDER.

others. The Show Rooms may be termed curiosities of the industrial arts, for they contain specimens of the carver's skill that astonish by their marvellous beauty, and comprise, we should imagine, every article that invention has furnished, in cabinet goods, from the earliest to the present times. No visitor to Hull should fail to see this most interesting manufactory.

MR. J. W. HOLDER, PIANOFORTE AND HARMONIUM DEPOT.

Amongst the leading trading establishments in Hull, we may mention the extensive one of MR. J. W. HOLDER, Pianoforte and Harmonium Warehouse: (the premises we have thought it worth while to illustrate.) At this establishment are kept *the most costly productions of the first-class London Pianoforte Manufacturers*, as well as their *cheaper* class of instruments, together with such a large number of all kinds and prices of pianofortes, that the poorest as well as the richest may here provide themselves with an instrument, having the advantage of so large a stock to select from.

From Hull there is a railway communication to London by the *East Lincolnshire Railway*, through NEW HOLLAND, ULCEBY, and GREAT GRIMSBY, which route is described in our COMPANION GUIDE TO THE GREAT NORTHERN AND MIDLAND RAILWAYS. From Hull, also, the tourist can proceed to London *vid* the Midland, and Lincoln by Ulceby, Barnetby, and Market Rasen, a distance (to Lincoln) of 41¾ miles. There is constant communication by steamers between Hull, New Holland, Grimsby, Gainsborough, and Goole.

From Hull the tourist can proceed (from the Victoria Station) by

THE HULL AND HOLDERNESS RAILWAY

to WITHERNSEA, a distance of 18 miles. The tourist will remark, *en route* between the railway and the river, thousands of acres formerly called the "out-marshes," which have been reclaimed, and now yield abundant crops of oats. The stations between MARFLEET and PATRINGTON occur at intervals of nearly two miles. At HEDON STATION, five miles and a quarter from Hull, the visitor might stop to see the handsome parish church, "the pride of Holderness." At KEYINGHAM, the midway station, nine miles and a half from Hull, *the men of* Holderness opposed the passage of Edward IV., with his

300 Flemings, until he replied "that he had only come to claim h dukedom of York." At Patrington, the church, with its graceful spir should be visited. The style of architecture is that which prevaile in the reign of Edward II. This fine edifice contains some choi specimens of the sculptor's art. Withernsea Station is the termin of the Hull and Holderness Railway. The Hotel and Refreshmen rooms at this place are open for the accommodation of visitors.

Returning to Hull, we will proceed on the

HULL, BRIDLINGTON, AND SCARBOROUGH LINE,

a total distance of 53½ miles. Four miles from our starting point, w reach COTTINGHAM STATION. The site of Baynard Castle is in th vicinity of this place, although indicated merely by the traces of moat and rampart. King John was a guest at this fortress, and i 1296, Edward I., having conquered Scotland, was entertained here b Lord Wake for several days. Two years afterwards the same monarc kept his Christmas here. When Henry VIII. was at Hull, he sent messenger to announce his intended visit to the Castle; but the owne having a beautiful wife whom he did not wish to expose to the gaze o the licentious monarch, left the castle, after giving instructions to confidential servant to set it on fire; which was effectually done nothing remaining but a heap of ashes.

Four miles and a quarter from Cottingham, we arrive at

BEVERLEY STATION. The town (population, in 1861, 9,560) i pleasantly situated at the foot of the York Wolds. The origin of th name is said to be derived from *Beverlac*, the lake of beavers, so name from the beavers with which the neighbouring river Hull abounded Mr. Walter White describes the appearance of the town "as staid an respectable, as if aware of its claims to consideration." The principa object of attraction is the celebrated MINSTER, or superb Collegiate Church of St. John, which exhibits various styles of architecture having been built at different periods. The edifice, as it now appears has been erected since the destruction by fire, in 1138, of an olde church that stood on the same spot. The east end is Early English the nave is Decorated, and the west front and some minor portions are Perpendicular. The towers rise to the height of 200 feet. In the interior the lofty proportions, the perspective of the aisles, the soaring

arches, the streaming lights, and tinted shadows, are impressive. All the windows were once, it is said, filled with stained glass; for the large east window was glazed in 1733 with the numerous fragments that remained after the destroyers of ecclesiastical art had perpetrated their mischief. The Percy Shrine, on the north side of the choir, is remarkably beautiful. It is a canopied tomb of exquisite workmanship, enriched with various carvings, figures of knights and angels, crockets and finials; marking the resting-place, it is supposed, of the Lady Idonea Clifford, wife of the second Lord Percy, of Alnwick. In the

BEVERLEY MINSTER.

south aisle of the nave is another canopied tomb of elegant form, covered by a slab of Purbeck marble, with no inscription. Another interesting object is King Athelstan's *Fridstool*, or chair of peace; the centre of a sanctuary which extended a mile from the Minster in all directions. Any fugitive who could once sit therein was safe, whatever his crime. The chair, hewn from a single block of stone, is very primitive in form and appearance. Athelstan conferred many privileges

upon the town. The principal window, at the east end of the Minster, is said to be copied from that of York. St. Mary's Church, at Beverley, is also exceedingly handsome and spacious. The ceiling of the chancel

ST. MARY'S CHURCH, BEVERLEY.

is decorated with painted portraits of forty kings of England, beginning with Brutus, and ending with Edward IV., about whose reign they were probably executed. Here the Corpus Christi plays were performed, and on St. Nicholas' day the custom of electing a "boy bishop" was observed. This Church is the scene of the accident recorded by the ancient rhymer:—

"At Beverley a sudden chaunce did falle,
The parish chirche stepille it fell
At evynsonge tyme; the chaunce was thralle:
Ffourscore folke ther was slayn thay telle."

At one end of the town, screened by an ancient brick wall, is the house of the Black Friars.

Beverley has a Grammar School of great antiquity, in which were educated Bishops Alcock, Fisher, and Green, all natives of this town. There are several Meeting Houses, Hospitals, Schools, Banks, House of Correction, *&c.*

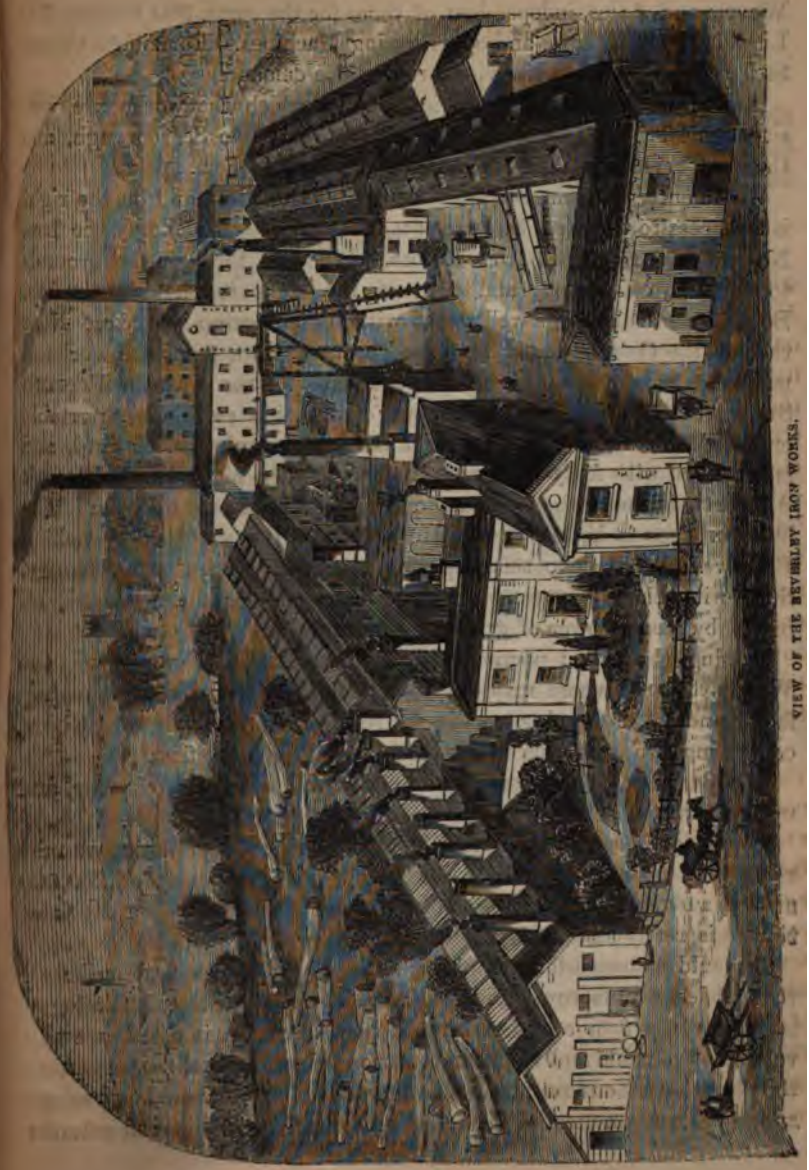
THE COMMERCIAL ASPECT OF BEVERLEY.

The town is well situated for trade, having a communication with Hull by a canal, called Beverley Beck. The trade of Beverley is chiefly confined to tanned leather, oatmeal, corn, malt, and coal. The principal manufactory is that of

The Beverley Iron Works,

which is one of the most considerable in this part of the kingdom. Here are manufactured Agricultural Implements and Machines, Carts, Wagons, Wheels, Axles, Bone Mills, &c. The list of prizes obtained by this eminent firm for the articles made at their works, would fill an entire page; suffice it to say for the Patent Clod Crusher and Roller alone they were awarded the Special Gold Medal (the only one ever given), thirty-seven sovereigns, and two Silver Medals, by the Royal Agricultural Society of England; the "Council Great Medal," at the Great Exhibition, in London, 1851; twenty sovereigns and two Silver Medals, by the Royal Agricultural Society of Ireland; eleven sovereigns and Silver Medal, by the Highland and Agricultural Society of Scotland; four Silver Medals and fifteen sovereigns, by the Yorkshire Agricultural Society; ten sovereigns, by the North Lincolnshire Agricultural Society; and Prizes or Medals in the principal provinces of England.

These works are now carried on by the Trustees of W. Crosskill. The business, established in 1827, has so increased that the premises occupy seven acres of ground, and the number of workmen employed exceeds 500. Besides the principal objects we have mentioned manufactured at these works, every description of Engineering and Iron-founding articles are made. During our visit to the works in the early part of the present year (1861), we observed a mortar (one of several) manufactured for the Government during the Crimean war, at which period they also supplied a vast quantity of shells. Upwards of 3,000 carts and wagons for the transport service were made here in 1855. The Agricultural Implements manufactured on these premises are renowned throughout the civilized world; ten thousand different *articles* are made annually, including 600 Carts, 1,000 pairs of patent



VIEW OF THE BEVERLEY IRON WORKS.

Wheels and Axles, independent of those for the carts, 500 Rollers, 200 Liquid Manure Carts, and 800 Reaping Machines. Romaine's Patent Steam Cultivators are, likewise, in extensive demand.

A large export trade is carried on, for which the works are well situated. They are on the main line from Hull to Scarborough, and there are three branches of rails running through them.

As we enter the premises the Offices are on our left, and on the right is an access to the great SHOW-ROOM for every article made by the firm. Near to this are large STORE-ROOMS. We pass through the grounds to the MODEL-ROOMS, and turn on the right to the FOUNDRIES. Beyond these are yards well stored with pig and scrap iron, &c. Near these is the GAS HOUSE, where the gas used throughout the works is manufactured by the firm for their own consumption. In the FITTING SHOP will be seen a large collection of valuable machinery, portable engines, &c. The SMITHY is one of the most complete of its kind, and is furnished with forty-six fires. Near to this the observer will remark with astonishment the immense quantity of bar-iron, coals, &c. The WAGON SHOP is in Mill-lane. Here we saw thousands of Trenching Barrows. Adjacent to this department are the CARPENTERS' SHOPS, filled with circular saws, planing, boring, and drilling machines, all moved by steam-power of great force.

Passing through a portion of the TIMBER YARD, we reach the WHEEL SHOPS, where may be seen in full activity, boring, turning, facing and spoke-dressing machines. Near to this is the ENGINE ROOM, containing two enormous engines manufactured by the firm.

The SAWING DEPARTMENT succeeds, with its endless, circular, and upright saws.

To give an idea of the immense stock at the Beverley Works, we may state that we saw in one of the timber yards upwards of 250,000 spokes, and an equal number of felloes ready for use. The stock of timber is really astonishing.

It would be impossible in our necessarily brief notices to describe all the articles manufactured at these works. The Illustrated Catalogue issued by the firm contains fifty-six pages, and is, in itself, a small volume of valuable and useful information, which we can recommend to the attention of our readers. One extract alone will show how various *and important* are most of the articles manufactured: this relates to the

SECOND VIEW OF THE BEVERLEY IRON WORKS.

PATENT PORTABLE FARM RAILWAY, which is thus described:—"It is made of best red deal, in 15ft. lengths, and of 2ft. 6in. gauge. Each length consists of two longitudinal sleepers, which are edged with angle iron where the wheels run, and are connected by transverse sleepers, in such manner that they can be folded together (as a parallel ruler is closed) for transport or shipment. The lengths are attached to each other by cross pieces, which have wrought-iron chairs fixed upon them to receive the ends of the longitudinal sleepers, and are fastened to them by pins in an exceedingly simple and efficient manner. Two men can lift the lengths and lay the Railway down. It is constructed to carry 15 cwt. loads, and has been extensively employed to convey manure, marl, lime, &c., over wet land; to remove turnips, potatoes, and other produce; and for earth work in making excavations, embankments, &c. In wet weather, when the land is so heavy as to be impassible for carts, the assistance of the Portable Railway has been found invaluable. The gauge of the rails is 2ft. 6in., and light wagons made to tip either endway or sideway run upon it. For deviations or corners either turntables or points are used according to circumstances, and parties using the railway are recommended to have two sets of points, so as to form a short double line where required. Landowners wishing to use their own wood, can be supplied with the ironwork complete in sets, or with angle iron drilled and straightened ready for putting on to the rails."

Twelve miles and a half from Beverley is *Hornsea*, a small town on the coast, on the west side of which is a lake called Hornsea Mere, nearly 440 acres in extent.

Leaving Beverley Station, and passing ARRAM, LOCKINGTON, and HUTTEN CRANSWICK STATIONS, we reach, 19½ miles from Hull,

DRIFFIELD STATION. Great Driffield is pleasantly situated at the foot of the Wolds. A considerable trade in corn is carried on here. St. John of Beverley, Archbishop of York, was born at *Harpham*, a village near Driffield, in 640; the venerable Bede was his scholar.

Leaving Driffield, the line runs along the base of the York Wolds, on the high grounds of which are numerous remains of antiquity, both of Roman and Saxon times. We pass the intermediate stations at NAFFERTON, LOWTHORPE, BURTON AGNES, CARNABY, and arrive at BRIDLINGTON STATION, 30¾ miles from Hull. The town stands at

distance of half a mile from the sea, on a fine bay which takes its e. It is built on a gentle declivity, and consists chiefly of one long et. The town of Bridlington Quay is situated on the shore, and is h frequented in the summer season as a bathing-place. The harbour ormed by two piers, which, stretching into the sea 150 yards, form greeable promenade.

he harbour is one of the few places of refuge for vessels caught by erly gales on the Yorkshire coast. A chalybeate spring bursts from cliff on the northern side; and near the middle of the port, an sian well throws up a constant stream, varying with the rise and of the tide. Bridlington attracts numbers of that class of visitors whom Hornsea is too quiet and Scarborough too gay. In fine ther steamers arrive with pleasure parties from Hull and Whitby, nborough Head being the great attraction. The Church, situate in town about half a mile from the Quay, was at one time as large and dsome as Beverley Minster, but it is now much dilapidated. In churchyard is a tablet to the memory of Thomas Newman, who d to the advanced age of 153. William of Newburgh, a well-wn monkish historian, was a native of Bridlington. The town ved its name from an Augustine Priory, founded in the reign of ıry I.

uitting Bridlington Station, we reach, at two miles and three ters' distance,

ARTON STATION, whence passengers can proceed to FLAMBOROUGH, f the tourist should prolong his stay at Bridlington, he can easily k from thence to Flamborough, 3½ miles distant. It is now only hing village, but was, at one time, a town of considerable import-. The Church is an ancient structure, and contains a curious umental inscription to the memory of Sir Marmaduke Constable. the west end of the village are the remains of a Danish tower. Two es distant is the famous promontory, Flamborough Head, the stu-dous cliffs of which rise perpendicularly from 300 to 400 feet. oss the peninsula which terminates in Flamborough Head is an ient work called the "Dane's Dyke."

One mile and a quarter from Marton, is BEMPTON STATION. The runs here parallel to the coast, at a distance of about a mile.

assing the stations of SPEETON, HUNMANBY, FILEY, GRISTHORPE,

CAYTON, SEAMER (*the junction of the line from York and Malton*), we reach SCARBOROUGH STATION. Scarborough (population in 1861, 18,350) is one of the most interesting marine spas in England. It combines the advantage of mineral springs with those of a convenient and luxurious sea-bathing shore.

VIEW OF SCARBOROUGH.

It is surrounded on the land side by numerous objects of attraction, to which either roads or footpaths, over moors and dales, offer a ready access to the visitor, with an exhaustless variety of study for the geologist, the naturalist, the antiquarian, and the lover of picturesque scenery. Mr. Walter White, in his charming work, "A Month in Yorkshire" (a book which no traveller in the "Ridings" should be without), gives an animated picture of Scarborough. He says—

"I turned up at Cayton Mill, past the large reservoir from which Scarborough is supplied with water, along the edge of the Undercliff to the High-road, leaving Cornelian Bay unvisited. At the hill-top you come suddenly upon a wide and striking prospect—a great sweep of *hilly country* on one hand; on the other the irregular margin of the

cliffs all the way to the town, and a blue promontory far beyond the castle bluff. On the left of the road, long offshoots from the bleak uplands of the interior terminate with an abrupt slope, presenting the appearance of artificial mounds. Another rise, and there is Scarborough in full view, crowding close to the shore of its bay, terminated by the castle rock, the most striking feature. Bright, showy houses scattered on the south and west indicate the approaches to the fashionable quarter, and of those farthest from the sea you will not fail to notice the *Cromwell Hotel*—a new building, in Swiss-like style of architecture, at the foot of Oliver's Mount. The Mount—so named from a tradition that the Protector planted his cannon there when besieging the castle—is another of those truncated offshoots, six hundred feet in height; and the summit, which is easily accessible and much visited, commands an interesting prospect. You see the tree-tops in the deep valley which divides the New Town from the Old, and rearwards, broken ground sprinkled with wood, imparting some touches of beauty to the western outskirts.

"Then, turning to the right, you come upon a stately esplanade, and not without a feeling of surprise after a few days' walking by yourself. For here all is life, gaiety, and fashion. Long rows of handsome houses, of clean, light-coloured sandstone, with glittering windows and ornamental balconies, all looking out on the broad, heaving sea. In front, from end to end, stretches a well-kept road, where seats, fixed at frequent intervals, afford a pleasurable resting-place; and from this a great slope descends to the beach, all embowered with trees and shrubs, through which here and there you get a glimpse of a gravelled path or the domed roof of a summer-house. And there, two hundred feet below, is the Spa—a castellated building protected by a sea-wall, within which a broad road slopes gently to the sands. You see visitors descending through the grove for their morning draught of the mineral water, or assisting the effect by a 'constitutional' on the promenade beneath; while hundreds besides stroll on the sands, where troops of children, under the charge of nursemaids, dig holes with little wooden spades. And here, on the esplanade, elegant pony barouches, driven by natty little postilions, are starting every few minutes from the aristocratic-looking hotel to air gay parties of squires and dames around the neighbourhood. And turning again to the beach, there you see

rows of bathing-machines gay with green and red stripes, standing nea the opening of the valley, and now and then one starts at a slow pac laden with bathers to meet the rising tide. And beyond these th piers stretch out, and the harbour is crowded with masts, and tw steamers rock at their moorings, waiting for 'excursionists:' the whol backed by houses of the Old Town, rising picturesquely one above th other, and crowning the castle heights.

SCARBOROUGH CASTLE.

"But let us go and look down on the scene from the castle rock The ascent is steep, yet rich in recompense. St. Mary's Church, nea the summit, and the fragments of old walls standing amidst the graves remind us of its former dimensions, and of the demolitions it suffered during the siege. And there rises in massive strength, to a height o ninety feet, a remnant of the castle keep—an imposing ruin full befor us, as we cross the drawbridge, pass under the barbican, and along th covered way, to the inner court. But the court is a large, roug pasture, fenced on the north and east, where the cliff is bare an perpendicular, and towards the town shut in by a range of old wall pierced by a few embrasures, some low buildings, and the remains o an ancient chapel. There is no picturesque assemblage of ruins; bu *little, indeed,* besides the shattered keep, and that appears to best effec

from without. Near the chapel, Our Lady's Well—a spring famous from time immemorial—bubbles silently up in a darksome vault.

"Northwards the view extends along the rugged coast to the Peak, a lofty point that looks down on Robin Hood's Bay, and to hazy elevations beyond Whitby. To get a sight of the town you must return to the barbican, where you can step up on the wall and securely enjoy a bird's-eye view: from the row of cannon which crown the precipice sheer down to the port and away to the Spa, all lies outspread before the curious eye."

Scarborough possesses numerous churches and chapels, Assembly Rooms, Theatre, Banks, Libraries, &c., and all the requirements of a most comfortable and luxurious watering-place.

The neighbourhood is rich in the beauties of nature and art: among the latter we may mention *Rivaulx Abbey*, which is supposed to have been the first Cistercian monastery founded in Yorkshire. The ruins are of considerable extent, more perfect than those of most of the same class of monastic buildings in the county, Fountains Abbey excepted.

About four miles from Scarborough is the picturesque village of *Hackness*, and *Hackness Hall*, a noble mansion near the supposed site of St. Hilda's Cell. From Scarborough the tourist can return to the Marton Station, and at Rillington Junction, five miles and three quarters beyond, take the BRANCH LINE OF RAILWAY TO WHITBY, in length 5½ miles, passing the stations of MARISHES-ROAD, PICKERING, LEVISHAM, GROSMONT, SLEIGHTS, and RUSWARP.

WHITBY is a seaport and parliamentary borough on the coast of the North Sea, at the mouth of the river Eske. It has the appearance of a substantial and wealthy town; a portion of it is situated on the east bank of the Eske, but the larger and better built districts are on the western. The two parts are connected by a bridge, the middle of which is moveable for the purpose of allowing ships to pass. The port must have been of considerable consequence at the period of the

Conquest. The discovery of an alum mine at the close of Elizabeth's reign was the original cause that raised Whitby from its obscurity, and, by opening a channel for commerce, enabled the town to attain a degree of maritime prosperity. The principal objects worthy of notice are the venerable remains of the Abbey Church, situated on a high cliff, commanding a fine view; the Docks, the Piers, the Town Hall, Baths, Libraries, Museum, &c. St. Mary's Church, near the top of a hill, is approached from the bottom of the vale by 190 stone steps. It contains several monuments to the Cholmeley family. Three miles from Whitby is Mulgrave Castle, the seat of the Marquis of Normanby.

We will now pursue our railway journey from

WHITBY TO YORK,

returning to Malton. New Malton is a well-built town on the Derwent, and is supposed to have been the Roman Camelodunum. It contains the remains of an ancient castle, churches and meeting-houses, assembly-rooms, theatre, &c. The town carries on a large trade in corn, butter, and hams.

Malton is the central station of the THIRSK, MALTON, AND DRIFFIELD BRANCH OF THE NORTH-EASTERN RAILWAY.

Two miles and three quarters from Malton we reach HUTTON STATION, in the neighbourhood of which is *Welham House*, *Hilderley* (the seat of Sir G. Strickland, Bart.), and *Eastthorpe Hall*.

Three miles and a half from Hutton is CASTLE HOWARD STATION, two miles and a half from which stands the stately residence of the Earl of Carlisle, *Castle Howard*, erected by Charles, third Earl of Carlisle, on the spot where once stood the old castle of Hinderskelf. It is more extensive than Blenheim, and is not, altogether, the work of one architect. The north front was built by Sir John Vanbrugh, and consists of a rich centre of the Corinthian order. The south, or garden front, is also magnificent. The interior is splendidly furnished, choice pictures and rare pieces of antiquity meeting the eye at every step; and yet there is more magic in the simple name of HOWARD, associated as it is with the romantic features of English history, than in all these accumulated splendours.

After leaving Castle Howard Station, we pass the stations of KIRK-

HAM, BARTON-HILL, FLAXTON, STRENSALL, HAXBY (all occurring within short distances from each station, and presenting no features of peculiar interest), and arrive in YORK, which city is described in the commencing pages of this Guide.

We will request the reader to accompany us on the

YORK AND HARROGATE LINE.

Passing over the stations of POPPLETON, HESSAY, MARSTON, HAMMERTON, CATTAL, ALLERTON, and GOLDSBOROUGH, we reach (16¾ miles distant from York)

KNARESBOROUGH STATION. The town is finely situated on the N.E. bank of the river Nidd. It is large and handsome, and the houses are well built. It is well placed for carrying on manufactures, the river being rapid, deep, and serviceable for turning the wheels of mills and machinery. The manufacture of linen has long been established here, and cotton has been introduced. The chief goods made are low

KNARESBOROUGH, YORKSHIRE.

ginghams, bedding-ticks, and sheetings. The Church of St. John the Baptist is ancient, and contains monuments to the Slingsbys. The remains of the Castle (which was erected soon after the Conquest) are picturesque. This fortress was granted by Edward III. to his son, the celebrated John of Gaunt, and was afterwards one of the places in which Richard II. was imprisoned. The Castle was dismantled at the

KNARESBOROUGH CASTLE, YORKSHIRE.

time of the Commonwealth. In the walk along the banks of the Nidd, opposite the ruins of the Castle, is the celebrated petrifying, or *Dropping Well*, one of four mineral springs in the parish. It rises at the foot of a limestone rock, about forty yards from the bank of the river. Near to this is *St. Robert's Chapel*, a curious excavation in the solid rock; its roof is groined, and the altar is adorned with Gothic ornaments; here are also the figures of three heads, designed, as is supposed, for an emblematic allusion to the order of the monks of the once neighbouring priory, by some of whom they were probably cut: the order was styled *Sanctæ Trinitatis*. St. Robert, the reputed founder of this chapel, was the son of Tooke Flowers, Mayor of York in the time of Richard I.

About half a mile lower down the river are the remains of the *priory, founded* by Richard Plantagenet. A mile to the east is *St.*

Robert's Cave, remarkable for the discovery of a skeleton here in 1759, which led to the conviction and execution of the celebrated Eugene Aram. Population in 1861, 4,848.

Two miles and a half from Knaresborough, we reach Starbeck, the Station for Harrogate.

HARROGATE stands almost pre-eminent of all the watering-places in England for its situation: for elevation, above the Irish and German Oceans, midway between which it is nearly placed; for position, at about equal distance between the three capitals of the United Kingdom; and for geological formation, favourable to human life. Extensive heaths and immense tracts of finely-cultivated country surround this favoured spot, rendering the air remarkably pure and bracing. There is a Low Harrogate and a High Harrogate. In point of antiquity the former bears away the palm, yet mineral water was first discovered at High Harrogate. The distance between the two is about a mile. The spas are of two kinds, the chalybeate and the sulphurous. Of the former there are two springs at High Harrogate, on the common, near the race-ground. The sulphurous wells are situated at Low Harrogate, which possesses, also, another valuable spring, containing the principal ingredients of the sulphurous waters in a weaker degree, with the addition of a chalybeate principle. The results of Professor Hofmann's elaborate and careful investigation place these mineral waters at the head of all British spas; and in respect to their number and variety, and the smallness of the circuit which comprises them, there is scarcely a spot in Europe which can worthily rival them. A distance of many miles separates places on the Continent where the various springs analogous to our own are to be found; and only at considerable expenditure of money, time, and trouble are they accessible; whereas here, within a circle of a mile and a half, through an extension of that remarkable geological phenomenon known as the Craven Fault, are to be found not far short of a hundred various

springs, one-fourth of which are made available for medicinal purposes.

The natural features of Harrogate itself are those of a sheltered basin, in which the principal springs issue from the earth, and an elevated plain immediately adjoining, where the pure chalybeates are found. The plain is an open table-land, or "common" of grass-land, of considerable extent (the "common" alone consists of 200 acres, by "the

ROYAL PUMP-ROOM, HARROGATE.

Forest Award"), situated midway between the two sea-coasts, and at a mean elevation of about 400 feet above the sea-level. The generally prevailing winds are westerly. In point of climate, the extremes of the thermometric range are less than those of London.

Harrogate possesses a considerable number of Hotels, Boarding-

houses, Public Baths, Promenade Rooms, Ball and Billiard Rooms, Circulating Libraries and Reading Rooms, and several places of worship. The population returns for 1861 give 5,567 inhabitants: in 1851 there were 3,618.

From Starbeck we can proceed to Ripon on the Leeds and Thirsk Railway, by Ripley, a small town, which was neatly rebuilt in the Tudor style, by Sir W. Ingilby, in 1829-30. The Church contains several monuments of the Ingilby family, and in the churchyard is the pedestal of an ancient cross. Near Ripley is *Ripley Castle*, the seat of the Ingilby family. According to an inscription carved in one of the rooms, the castle was built by Sir W. Ingilby, in the reign of William and Mary. It has, however, been much repaired of late years, and is now a commodious mansion, embattled only for ornament. The lodge and great tower still retain their characteristic features of strength and solidity. *Nidd Hall* is also in the neighbourhood of Ripley.

Ripon is delightfully situated on an eminence, within a short distance of the Skell and the Uri; the latter flows through a vale teeming with fertility, the woods of Studley Royal and the hills of Cleveland closing up the view. The city suffered much at various times: from the raids of the Danes, 950; during the revolt of the brave Northumbrians against the Normans, 1069; and in the incursions of Robert Bruce, in 1323. Henry IV., during the plague, 1405, found a refuge there. King James in 1617, and Charles I. in 1633 and 1646, paid royal visits. The city has a spacious market-place, ornamented with a lofty obelisk in the centre, 90 feet high, built in 1778. The Town Hall was erected by Wyatt, in 1801. The Chapel of St. Mary Magdalene, erected in 1139, has a screen, an altar, a picturesque bell-gable, a Norman doorway, and other antiquarian relics. The Chapel of St. John Baptist Hospital dates from the reign of Edward II.; that of St. Anne's from Edward IV. Trinity Church was built in 1826. Ripon contains several Chapels, Hospitals, a Free Grammar School (founded in 1547), a Mechanics' Institute. Near the Cathedral is a conical tumulus called Ellshaw or Ailcey Hill.

The chief place of interest in Ripon is the CATHEDRAL, the first stone of which was laid in 1331, but the choir was not probably finished until 1494. This superb building (said to be among the best proportioned churches in the kingdom) is composed of a central and two

western towers, a nave of six bays with aisles, a transept of two bays, with four eastern chapels, two in each wing; a choir of six aisles and bays. On the south side is the chapter-house, the south side of the Norman church, and a lady chapel above it. The west front is a very fine specimen of bold early English. The towers at this end are 110 feet high, besides which there is the great tower called St. Wilfred's. The east end is decorated. The interior is remarkably fine. A splendid screen (said to have been brought from Fountains Abbey) stands at the entrance of the choir.

RIPON CATHEDRAL.

The stalls bear the date 1494, and are equal to those in any of our other cathedrals. The throne was the gift of Archbishop Markham in 1812. The Trinity Chapel is under the central tower. On the north side is St. Wilfred's needle, supposed to have been a relic-chamber and a place of penance. The principal monuments are those of Sir T. Markenfield and Dame Dionysia, altar tomb and effigies, time of Richard II.; Sir T. Markenfield and Dame Eleanor, effigies, 1483; Sir William and Sir John Mallorie, in the Mallorie chantry.

The Bishop's Palace is a mile distant from the city, and was built in 1841.

About three miles from Ripon is *Studley Royal*, the seat of the Earl *de Grey*. The house is elegant and commodious, the apartments beauti-

fully furnished, and the collection of pictures by the great masters
the highest quality. The principal object of attraction, however, is th
celebrated pleasure-grounds (a continuous garden of upwards of thre
hundred acres), which include the venerable remains of FOUNTAINS ABBEY, said to be the most perfect monastic building in England. The very name is suggestive of a world of pleasant associations, green ruins, with many a legend or story hanging abou
them, picturesque and attractive as themselves, of quiet woods. It is n

FOUNTAINS ABBEY, YORKSHIRE (DISTANT VIEW).

FOUNTAINS ABBEY, YORKSHIRE (INTERIOR).

wonder that this abbey should have obtained such a world wide reput
tion. All the walls of both church and monastery yet stand, thoug

roofless and with dilapidated windows. The majestic tower, from its unusual position at the north end of the transept, still rises in serene grandeur. We may walk through the nave and admire the arch of its once glorious eastern window; from thence wander into the ruined choir. The chapter-house yet tells us of the abbots who sat there in spiritual government, and some of whose tombs now lie beneath our feet, with half-illegible inscriptions. We can still perceive over the chapter-house where the library was situated, in which the monks read. The visitor will leave with regret these magnificent ruins.

Two miles S.E. of Ripon is *Newby Hall*, the property of Earl de Grey.

Returning to Ripon Station, the visitor can continue his journey north to Melmerby and Northallerton, from whence he can return with us to Starbeck, and proceed southwards to LEEDS, passing ARTHINGTON, HEADINGLEY, and HOLBECK JUNCTION Stations.

Having fully described the important town of Leeds in OUR COMPANION VOLUME OF THE GREAT NORTHERN RAILWAY, we need but refer our readers to that work, for such information. From Leeds we can rejoin the main route to York at Milford Junction Station, by the line to Selby and Hull, or proceed to Normanton, and thence join the main line from Knottingley Station, described in the Great Northern route of our Companion Volume.

We now invite our readers to accompany us on the

MAIN LINE FROM YORK TO NEWCASTLE AND BERWICK.

The principal works on this line are the Dalton cutting, near the Cowton Station, the Lees embankment, Castle Hill cutting, and the Northallerton embankment. The principal bridges are those over the Lees and the Ouse. The former is a handsome oblique structure, consisting of fine large segmental arches, built of sandstone The height from the surface of the water is about 50 feet. The bridge over the Ouse, at Nether Poppleton, is built principally of stone; the arches, three in number, are of semi-elliptical form, and it stands 30 feet above the bed of the river.

The first station at which we stop after leaving York is SHIPTON, 5½ miles distant. Two miles west is *Benningborough Hall*; six miles *further in the* same direction is *Allerton*, the seat of Lord Stourton, an

elegant mansion, built for the late Duke of York. Four miles east is *Sutton on the Forest*. The celebrated Laurence Sterne was vicar of this parish. *Sutton Hall* is the residence of W. C. Harland, Esq.

Four miles from Shipton is TOLLERTON STATION. Tollerton is seated on a small branch of the river Nidd, which is supposed to have been formerly navigable, as in 1815 part of a ship was found beneath the foundation of a mill. Passing ALNE and RASKELF STATIONS, we arrive at PILL-MOOR JUNCTION STATION. Here is a BRANCH LINE TO BOROUGHBRIDGE, 5¾ miles in length. SESSAY STATION succeeds to Pill-Moor Station, and from thence we reach THIRSK JUNCTION STATION. *Thirsk* is a well-built town, situated on the banks of the little river Codbeck, which divides the old town from the new. Of Thirsk, Mr. Walter White says, "Of the Castle of the Mowbrays—the rendezvous of the English troops when marching to the Battle of the Standard—the site alone remains on the south-west of the town. The chantry, founded by one of the Mowbrays in Old Thirsk, has also disappeared; and the great tree, that stood on the green in the same suburb, has gone too. It was under the tree on Thirsk Green, and not at Topcliffe, as some say, that the fourth Earl Percy was massacred."

St. Mary's Church (which has recently been restored) is a handsome Gothic structure, and is said to have been built with the ruins of the ancient castle, which was destroyed in the reign of Henry II. It contains several monuments. From Thirsk there is a branch line to Ripon, Leeds, &c.

Leaving Thirsk, and passing OTTERINGTON STATION, we reach, 30 miles from York, NORTHALLERTON JUNCTION STATION. There is a BRANCH LINE FROM HENCE TO BEDALE AND LEYBURN, a distance of 18 miles. *Northallerton* is supposed to have been a Roman station, subsequently a Saxon borough. Near the town the celebrated Battle of the Standard was fought in 1138, between the English and Scotch, in which the latter were defeated. The spot is still called the "Standard Hill."

About 1174 Henry II. ordered the demolition of the episcopal palace, traces of which are still visible on the west side of the town. In 1318 the Scots plundered and burnt the town. During the Civil War, Charles I., in one of his journeys to Scotland, lodged here in an old mansion called the Porch-house. Northallerton stands in the

beautiful vale of the Wiske, and consists principally of one spacious street. Northallerton is the junction station of the

LEEDS, STOCKTON, AND HARTLEPOOL RAILWAY.

upon which we propose to conduct our readers, returning to Northallerton, and resuming afterwards our route upon the Main Line.

After passing BROMPTON and WELBURY STATIONS, we arrive at PICTON JUNCTION STATION, where the BRANCH LINE TO STOKESLEY commences. The next station to Picton is YARM, a town situated on a narrow neck of land, washed on three sides by the river Tees. Owing to the extreme lowness of its position, it has suffered severely from inundations. A small trade is carried on in corn, bacon, &c. The church is adorned by a stained-glass window of great beauty.

From Yarm we proceed to PRESTON JUNCTION STATION, whence there is a BRANCH LINE TO GAINSBOROUGH AND REDCAR (by Middlesborough). *Gainsborough* was the first place in England where alum-works were erected. Here are the ruins of an abbey, which was once the burial-place of the nobility of the surrounding country. The country around Gainsborough is remarkably beautiful. *Redcar* and *Coatham* are small villages, much frequented for sea-bathing. The sands are of considerable extent, and remarkably fine.

From Preston Junction Station we proceed to STOCKTON STATION. The town is seated on the Tees, and is one of the most attractive and cleanly towns in the North of England. The Bishops of Durham had, from an early period, a residence here. The palace was demolished in 1652, but the traces of the moat and embankment still mark the site.

Stockton possesses several churches, meeting-houses, a town-hall, custom-house, literary institutions, a grammar and other schools, and various charities. The principal manufactures of the town are those of engines, linens, and sailcloth. There are also iron and brass foundries, breweries, and some corn-mills; ship-building, rope and sail-making, and yarn and worsted spinning are carried on. There are some extensive coal-works near the town, and salmon and other fisheries in the Tees. The harbour of Stockton is formed by the river Tees. A considerable trade is carried on with the Baltic, Holland, Hamburg, and British America, and, coastwise, with London, Leith, Hull, Sunderland, &c.

From Stockton we proceed to WEST HARTLEPOOL. In 1847 a

harbour of thirteen acres, and a dock of eight acres behind it, were formed on the west shore of Hartlepool Bay, under the protection of the headland, near which a considerable town, distinguished as West Hartlepool, has sprung up, with various public buildings, and every appearance of prosperity.

Hartlepool is seated on a bold and nearly insulated headland, which forms the north horn of a fine bay between 700 and 800 acres in area. In 1189 Hartlepool was annexed to the see of Durham, and became the grand emporium of the diocese. In 1680, it became a dependent port on Stockton, and from 1785 to 1832 the commercial condition of Hartlepool declined to that of a small fishing town. It has now, however, become a renovated and flourishing port. Railway communications have opened to it new sources of trade, by connecting it with the inexhaustible coal-fields and lead districts of Durham; and its recent progress as a sea-port is so extraordinary that there is every probability of its becoming one of the principal ports for the shipment of coals in this part of the kingdom.

The name of the town was derived from Hart-le-pol, the Pool or Slake of Hart. A monastery, which is mentioned by Bede, was founded here at a very early period. Hartlepool was fortified and walled during the 13th century. Some remains are still seen. The old haven is now entirely disused. Out of the rocks on the shore of the peninsula, the sea has excavated several caverns, which may be explored for nearly fifty yards. From HARTLEPOOL there is a BRANCH RAILWAY TO SUNDERLAND. There is also a BRANCH LINE FROM HARTLEPOOL TO FERRY HILL, 17¼ miles in length.

We will now return to Northallerton, and pursue our route on the

MAIN LINE

TO NEWCASTLE and BERWICK.

Seven miles and a quarter from Northallerton we reach Cowton Station. Two miles west is *Halnaby Hall;* one mile further *Middleton Tyas;* two miles east is *Great Lineeton;* two miles north-west is *Jockburn,* in the county of Durham. *Jockburn Hall* is a handsome Gothic mansion. Two miles from Cowton Station, the train arrives at DALTON JUNCTION STATION, where there is a BRANCH LINE TO RICH-

MOND, ten miles in length, passing by MOULTON, SCORTON, and CATTERICK BRIDGE STATIONS.

Richmond is the capital of the extensive baronial liberty of Richmondshire. The town is seated on a lofty eminence, boldly rising from the river Swale, which winds round the town and Castle in a semicircular direction. It is greatly admired by tourists for its romantic beauties. Most of the houses in the town are well built. The Town Hall is a good-sized, convenient building, and contains a large assembly-room. There is a bridge over the Swale at the end of the street called Bargate, and one built by the railway company. The Parish Church, a Gothic building, with a tower at the west end, is situated on a declivity of the hill in Frenchgate. It contains several interesting monuments. Holy Trinity Chapel stands in the Market-place. A small monastery, with a solitary central tower on the north of the town, is called the Grey Friary. In the north-east corner of the parish churchyard is the Free Grammar School, a plain stone fabric. On the opposite side of the road is a picturesque Gothic building, a testimonial erected for Mr. Tate, for thirty-seven years master of the school.

The great attraction of Richmond is the celebrated CASTLE, one of the most stupendous fortresses of the middle ages, now in ruins, but

> "—— time has been that lifts the low,
> And level lays the haughty brow,
> Has seen this broken pile complete,
> Big with the vanity of state."

It was built by the first Earl Alan Rufus, son of Hoel, Count of Bretagne. The Castle is on the south side of the town, overlooking the Swale, which runs in a deep valley beneath. Between the river—one of the loveliest streams which Yorkshire can produce amid her thousand rivulets—and the site of the Castle, is a walk of eight or nine feet in breadth, above sixty feet, and perpendicular, above the bed of the river and presenting to the eye a precipice of great abruptness. The west side of the fortress is faced with a deep valley, the ascent from which to the Castle is exceedingly steep.

Several parts of this grand baronial residence are very interesting, such as Robin Hood's tower. The ground-floor forms a vaulted chapel, *that of St.* Nicholas. The next tower is the Golden Tower, or Gold

Hole—so called from a tradition that treasure has been found in it. Adjoining is the Hall of Scotland, the great banqueting room. The Keep is about 100 feet high, and the walls are eleven feet thick. The walks round this interesting ruin present a succession of the most varied and romantic scenery.

About a mile below Richmond, in the parish of Easby, are the extensive remains of *St. Agatha's Abbey*, founded in 1152 by Roald, the constable of Richmond Castle. The gateway is a beautiful building; but the most striking portion of the ruins is the refectory.

The little Church of *Easby* is a gem, realizing all our ideas of a model village temple. On the green, south of this church, is the "Abbot's Elm." Near Richmond is *Aske Hall*, the seat of the Earl of Zetland.

Returning to Dalton Station, we will pursue our railway route. Between this and CROFT STATION we cross the river Tees, and enter the county of Durham.

Four miles west from Croft is *Stanwick Hall*, the property of the Duke of Northumberland, and *Forcett Hall*. Four miles further west is *Rokeby Park*, the seat of the Morritt family. The hall is an elegant mansion, occupying the site of an ancient manor-house. The park is remarkably beautiful. The genius of Scott has given an imperishable celebrity to this spot. *Croft Hall* is the seat of Sir W. R. C. Chaytor. *Neasham Hall* is two miles and a half from Croft.

Two miles and a quarter from Croft Station brings us to

DARLINGTON STATION. The town is seated on the banks of the Ikerne, over which there is a bridge of three arches. The streets diverge from a handsome market-place. St. Cuthbert's Church, which was formerly collegiate, dates from the twelfth century. It is cruciform, and has a lofty spire. There are several other places of worship, a grammar-school (founded by Queen Elizabeth), a town-hall, union workhouse (formerly the Bishop's palace), and other public buildings. Darlington carries on a considerable trade. The chief occupations of the inhabitants are combing wool, spinning flax, grinding optical glasses, and founding iron. In the neighbourhood are *Blackwell Hall*, *West Lodge*, *Walworth Castle*, *Sellaby Hall*, *Stub House*, &c. Four miles south-west of Darlington is *Middleton*, a small market-town, a short distance from which is *Wynch Bridge*. This fabric, made of wood, is

suspended on two iron chains. Its height above the river is fifty feet. Three miles from hence is *High Force*, or *Force Fall*, a cataract, dashing its waters over a huge rock, seventy feet high. Above the fall the river is narrow, but it is precipitated at this spot into a reservoir more than sixty feet deep.

From Darlington there is a BRANCH LINE TO STOCKTON, about twelve miles in length, by MIDDLETON, YARM, AND PRESTON JUNCTION STATIONS.

From Darlington there is also a BRANCH LINE TO BARNARD CASTLE, by PIERCEBRIDGE, GAINFORD, and WINSTON.

TOWN of BARNARD CASTLE is seated on the river Tees. The name is derived from a celebrated fortress erected here, soon after the Conquest, by Barnard, son of Guy Balliol. The ruins of the Castle are extensive, including within their area a circumference of six acres. Balliol's Tower is remarkable for the curious construction of its vaulted roof. The prospect from the top commands a rich and magnificent view of the wooded valley of the Tees.

Barnard Castle is the scene of part of Sir Walter Scott's poem of Rokeby. It is the property of the Duke of Cleveland, whose seat, *Raby Castle* (a fine old baronial building), is six miles and a quarter distant.

Between two and three miles from Barnard Castle is *Streatham Castle* (John Bowes, Esq.), situated in a secluded and romantic vale, encircled by lofty hills. From Darlington the tourist can proceed to CARRHOUSE, by BISHOP AUCKLAND.

The first station on leaving Darlington is AYCLIFFE. The village is of considerable antiquity. Here, according to Saxon authority, a synod was held in the year 782, and again in 789. One mile south of this village is *Cotham Mandeville*. Three miles and a quarter from Aycliffe is SHILDON STATION. At this station is the HAGGERLEASES BRANCH RAILWAY, including the intermediate stations of TUNNELL JUNCTION, ST. HELEN'S, EVENWOOD, and LANDS.

Three miles from Shildon Station we reach Bishop Auckland Station. The town is neat and well-built, and is seated near the confluence of the Gaunless with the Wear. It has some manufactories of muslin and cotton goods. The name is derived from its vicinity to the palace of the Bishops of Durham.

RUINS OF BARNARD CASTLE, ON THE TEES.

Auckland Castle, the residence of the Bishops of Durham, stands on an eminence above the town, and is a splendid but irregular pile erected at various periods. Its situation amidst hills and green sloping lawns, rocks, woods, and water, is remarkably beautiful. The palace contains a fine collection of paintings. The original edifice was erected by the famous Bishop Beck, but it was destroyed during the Commonwealth, and the palace built on its site by Bishop Cosin was also pulled down at the Restoration.

The Dearness Valley Railway commences here, incorporated July 30, 1855, as a line from the Bishop Auckland branch of the North-Eastern Railway to the Stanley branch of the Stockton and Darlington, in length 5¾ miles. It passes over a valuable coal-field, and cost about

£40,000. The North-Eastern Company purchased the line, which was opened January 1, 1858.

From this town is also the BISHOP AUCKLAND AND PENSHER JUNCTION TO SUNDERLAND, 15¼ miles in length, by Durham and Leamside.

Two miles and a quarter from Bishop Auckland we arrive at ETHERLEY STATION, and one mile beyond at WITTON JUNCTION, where there is a BRANCH LINE to PROSTERLEY, by WITTON-LE-WEAR and WOLSINGHAM STATIONS. From Prosterley the tourist can reach STANHOPE by omnibus.

Returning to WITTON JUNCTION STATION we pursue our railway route towards Carrhouse to BEECHBURN STATION, two miles and a half from Witton. Three-quarters of a mile beyond, we reach CROOK STATION, and thence by TOW-LAW, BURN-HILL JUNCTION, GOLD ROWLEY STATIONS to CARRHOUSE, about thirty-five miles from Darlington. Returning to Darlington we will continue our journey on the

MAIN LINE TO NEWCASTLE.

Six miles from Darlington we reach AYCLIFFE STATION, and five miles and a quarter beyond, BRADBURY STATION. One mile and a half north-east of Bradbury is *Hardwick Hall*, celebrated for the beauty of its pleasure-grounds. The mansion is an irregularly-built edifice, but most pleasantly situated. Three miles and a quarter, south, is *Windleston Hall*, the residence of the Eden family, whose ancestors held this property in the time of Queen Elizabeth.

Two miles and a quarter from Bradbury Station is FERRY HILL STATION, where there is a BRANCH LINE TO HARTLEPOOL, 15½ miles in length, on the right of the main railway from York, and a BRANCH TO WILLINGTON AND BYERS GREEN on the left.

At an early period, the Convent of Durham had a chapel at Ferry Hill, with a court-house, swannery, and fish-pool. There are still some remains of the swan-house. Half a mile north of Ferry Hill is *Thrislington*.

Four miles and three quarters from Ferry Hill Station, we arrive at SHINCLIFFE STATION. *Shincliffe* is a chapelry in the parish of St. Oswald, on the river Wear. Half a mile west is *Shincliffe Hall*. The mansion is sheltered by a fine amphitheatre of hanging woods.

From Shincliffe we pursue our railway route to LEAMSIDE JUNCTION

STATION, and thence to *Durham*, sixty-seven miles and three quarters from York.

DURHAM, the capital of the county palatine, and the seat of the see of Durham, is situated on a singular rocky eminence, almost surrounded by the river Wear. From all neighbouring points of view, the appearance of this interesting city is striking. The centre of this rocky circular eminence, which rises abruptly from the Wear, is prominently occupied by the Cathedral and the Castle, which, with the streets called "the Baileys" are included within the remains of the ancient city walls; here the objects seem to rise one above the other, till they are crowned with the Cathedral Church. Below the city walls, on one side the slope

DURHAM CATHEDRAL (WEST VIEW).

is ornamented with hanging gardens and plantations descending to the river; the acclivity on the other side is rocky, steep, and high. The Cathedral precincts, and the site of the ancient city, form, towards the south, a kind of peninsula, surrounded by the river. Elvet and Framwellgate Bridge cross the bend of the river at the narrowest part or neck of the peninsula. Elvet, a township on the east side of the peninsula, is separated only by the river. The County Gaol and Court House are situated in this township. Framwellgate consists principally of a

single street, running north from the bridge, whence another suburb, called Crongate, branches off. North of the peninsula is situated the parish of St. Nicholas, which, together with the peninsula itself, contains what is termed the old town. In this quarter are the Market-place and the principal shops. North and South Bailey are small townships situated between the Cathedral precinct and the river. A handsome bridge of three arches crosses the river at the S.W. extremity of South Bailey. The chief glory of Durham is its celebrated Cathedral. Bishop Aldhune consecrated the first Cathedral in 999 ; and it was completed by Bishop Edmund in 1021-41. In 1093, Bishop William of Calais, in the presence of Malcolm, King of Scots, laid the foundation of a new choir, which, like its aisles, terminated in an apse ; a screen parted off the central chevet for the tomb of St. Cuthbert. Sir Walter Scott records the translation of this Saint to Durham—

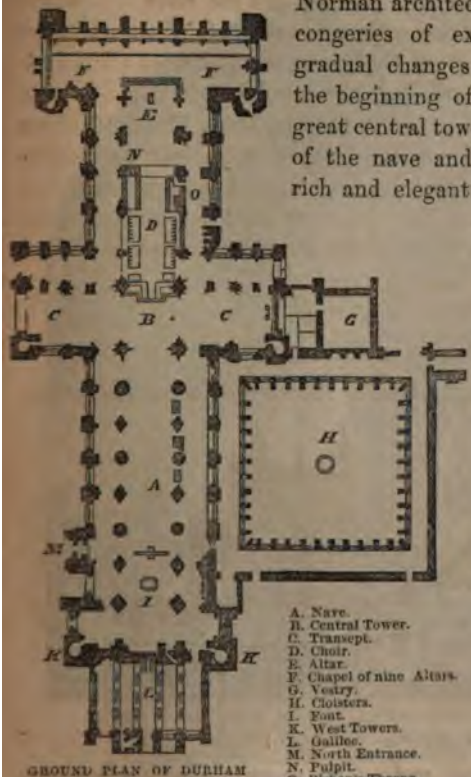
"When, after many wanderings past,
He chose his lordly seat at last,
Where his cathedral, huge and vast,
Looks down upon the Wear."

The west end of the church, which is represented in our engraving,

DURHAM CATHEDRAL (WEST TOWERS, FROM THE SOUTH).
(*From a photograph by Poulton.*)

rises from the rocks, which almost overhang the stream. The elevated, bold, and singular position of this cathedral adds greatly to the striking

effect and grandeur of its appearance. The original form of the structure is that of a long cross, with two turrets at the west end, and between them a large and richly ornamented door of entrance. Successive additions, including the great or central tower, built in the thirteenth century, have rendered this cathedral a perfect specimen of Norman architecture, and a highly instructive congeries of examples, illustrative of the gradual changes in the English style up to the beginning of the fifteenth century. The great central tower rises from the intersection of the nave and transept, and is singularly rich and elegant. The height of this tower is 214 feet. The extreme length of the whole edifice, exclusive of the Great Western Porch or Galilee, is 411 feet. The interior of the cathedral is highly interesting, preserving much of the ponderous, yet venerable magnificence of the early Norman style. We append a ground-plan of the cathedral, by the aid of which our readers will be able to trace the various portions of this magnificent building.



GROUND PLAN OF DURHAM CATHEDRAL.

The Galilee, at the west end of the church, consists of five compartments. In the base tier are two arcades of round-headed arches, under a band of reticulated work. The name of *Galilee* was given to the place of reception of women penitents, and the hearse of the dead, who were supposed to stand to the religious as the Galileans to the Hebrew of Hebrews. A blue line of stone on the floor of the nave marks the limit which women entering the minster

were bound to observe. A monk, at noon, daily preached in the Galilee to a congregation of women. The nave consists of five principal compartments, divided by four huge piers. The triforium and clerestory are almost the same throughout the whole length of the nave. The former consists of a series of large semicircular arches, adorned like the

GALILEE IN THE LADY'S CHAPEL, DURHAM CATHEDRAL.
(*From a photograph by Poulton.*)

great arches of the nave, and resting on short cylindrical columns, engaged, beneath which are two smaller arches of the same form, resting on an isolated column of the same style. The two sides of the nave are nearly alike; the aisles on both sides have an elegant arcade of intersecting semicircular arches running beneath the windows. The transept is similar to the nave in point of architecture. The organ *screen, dividing* the transept from the choir, is modern, as are also the

stalls for the dean, prebendaries, and inferior members of the churc
The Bishop's Throne, and High Altar Screen, are the glory of th
choir. The former is stately and magnificent, as well as elegant an
beautiful. The latter is the most superb thing of the kind in th
kingdom.

NAVE OF DURHAM CATHEDRAL.
(*From a photograph by Poulton.*)

The centre division of the eastern side of the Nine Altar Chape
contained the altars of St. Cuthbert and Venerable Bede, as well a
those of St. Oswald and St. Lawrence on one side of it, and St. Marti
and St. Edmund on the other.

Durham Cathedral has no crypt, nor any ancient monuments of an

great magnificence; there are some gravestones of bishops, the tombs of Ralph, Lord Neville, and his son John, and that of Bishop Hatfield, underneath his throne; and in the Galilee is an altar tomb which once supported the shrine of Venerable Bede. The font is remarkable for its canopy, which is octagonal, and rises to a considerable height. The cloisters are on the south side of the nave.

TOMB OF LORD NEVILLE, DURHAM CATHEDRAL.
(*From a photograph by Poulton.*)

This Cathedral was dedicated to St. Cuthbert, but Henry VIII named it the Cathedral Church of Christ and the Blessed Virgin, upon his refounding and endowing it.

Extensive repairs have lately been made to the Great Central Tower

of the Cathedral. In October, 1858, it was found necessary to restore the top parapet, on account of its loose and insecure condition; after which, the Dean and Chapter resolved to restore the tower in the best known way. The entire upper stage has been faced with Prudham and Dunhouse stone; all the buttresses have been rebuilt some distance lower, one to the very roof. The great lantern window on the east side has been restored; the old figures, of which the tower had been denuded, have been reinstated (the precaution of first coating them with a solution of shell-lac having been taken); the requisite new figures have been added, and the joints of the old unrestored masonry have been raked out and pointed with cement. Of the figures, the whole of the ten on the east side are new, by Mr. Beall, of Newcastle. The entire number of old figures replaced is twenty-seven—of new ones added thirteen.

The present Bishop of Durham is the Right Reverend Montague Villiers, D.D. The Dean is the Reverend G. Waddington, D.D.

From the Cathedral on the north extends the Place or Palace-green, on the north side of which is the Castle, now occupied by the University. It was founded June 1st, 1837, is principally Norman, but with additions from that period to the present time. The Keep is an irregular octagon; its widest diameter being 63 feet 6 inches; its least 61 feet. It has been restored to form College-rooms. This highly important institution was established by the Dean and Chapter, under an Act of Chapter, dated April 28th, 1831, and confirmed and endowed as a University, in connexion with the Cathedral, by Act of Parliament, 2nd and 3rd William IV.

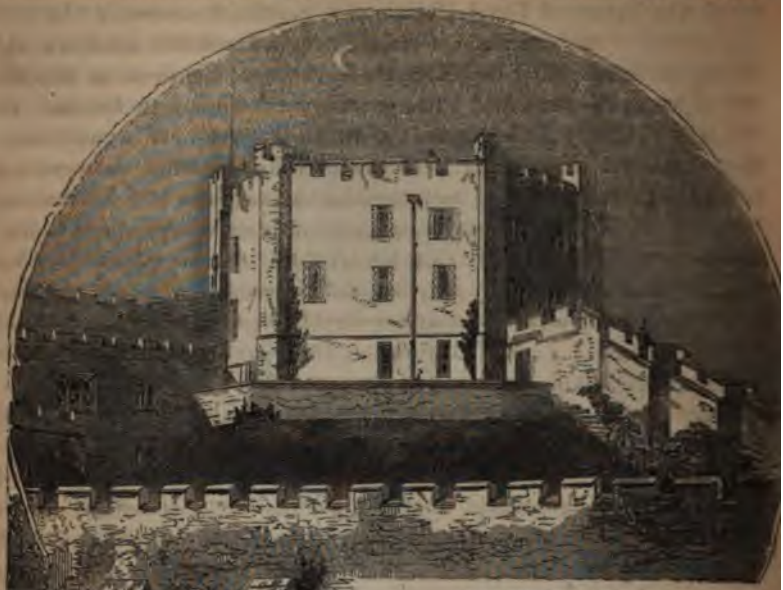
The Norman Chapel of the Castle is appropriated to the use of the College. The Dining-hall is used as the College-hall, and the Keep has been restored in good taste.

The Castle was erected by William the Conqueror, and, until lately, was the residence of the Bishops of the Palatinate.

The most interesting objects in Durham, after those we have mentioned, are the Gateway of Kepyer Hospital; the ruins of St. Mary's Hospital; St. Oswald's Church, late decorated, so shaken by coal mines as to be dangerous; the ruins of Neville's Cross, and the noble old bridge at Framwell-gate, erected by Bishop Flambard; Elvet Bridge, rebuilt 1225-8, altered 1806.

Durham also possesses numerous churches, meeting-houses, chapels,

court-houses, a prison, erected in 1809, at a cost of £120,000; the Guildhall, erected in 1555 by Bishop Tunstall, an infirmary, theatre, the



THE KEEP, DURHAM CASTLE.

remains of *Finchale Abbey*, in a vale, near the river, a mechanics' institute, and numerous educational and charitable institutions.

The trade of the city is not so extensive as it was formerly. Hats, stuffs, and carpets, brass and iron wares, are manufactured in Durham to some extent. The neighbourhood of the city is famous for large crops of mustard.

The walks around the city afford most pleasing promenades.

Three-quarters of a mile from Durham is the site of the *Maiden Castle*, a fortress ascribed to the Normans,

as also some remains of the Icknield Street. One mile west of the city, is *Neville's Cross*, erected by Ralph, Lord Neville, to commemorate the defeat and capture of David II.

Chester-le-Street is six miles from Durham, built upon an old Roman road, and on or near a Roman station. It became in 882 the seat of the bishopric which was removed hither from Lindisfarne. In 995 a Danish invasion drove away the bishop and his clergy, who afterwards settled at Durham. The Church (formerly collegiate) has a tower 156 feet in height; and contains a collection of stone effigies of the Lords of Lumley, from Lyulph, the Saxon founder of the family, to the reign of Elizabeth. They are fourteen in number, each resting on its altar tomb, and the name, armorial bearings, and immediate connexions of each knight or baron, are displayed on a tablet on the wall above his tomb.

One mile distant is *Lumley Castle*, the seat of the Earl of Scarborough, seated on an elevation above the Wear. The great hall is 90 feet long. The mansion forms a quadrangle, with an area in the centre, projecting turrets at each angle, of an octangular form, and which overhang the face of each square at the base, and are machicolated for the purpose of annoying assailants; and they give to the general appearance of this stately mansion a most singular effect. The whole is composed of yellow freestone.

One mile west is *Lambton Hall*, the residence of the Earl of Durham, seated on the north bank of the Wear. It is a modern structure, erected by Bononi. The library is a well-proportioned quadrangular room, with a neat gallery around it. The grounds are agreeable, and the ride through a hanging wood, on the southern bank of the Wear, is very beautiful.

Brancepeth Castle is situated between Durham and Bishop Auckland, at the distance of about four miles from the former city. At this place, the rising of the North, in 1569, was rashly determined upon. Sir George Bowes threw himself into Barnard Castle, and defending it on behalf of Queen Elizabeth, detained the rebels long before its walls, and gave time for the loyal troops to assemble. The insurgents eventually dispersed without a battle.

The building of Brancepeth Castle was commenced in the reign of Henry I., and was considerably added to in the reign of Henry III.,

by the Nevilles, Earls of Westmoreland, to whom it then belonged. The Castle was greatly embellished in 1822, by Matthew Rupell, Esq.

The *Lanchester Valley Railway* of the North-Eastern Company, is progressing rapidly. In 1857 powers were obtained to construct this line, 13 miles in length. The line joins the Bishop Auckland Branch at Langley, near Durham, and extends to Consett, with the object, doubtless, of forming a junction with the Derwent Valley Railway at that point, should the promoters of the bill now before Parliament succeed in obtaining the object sought. The line now being constructed is one of some importance, and irrespective of the traffic which it will open out, a large tract of country will ere long be brought within reach of railway communication; hence an impetus will be given to the trade of the district generally. The line passes through one of the most picturesque valleys in the county, and the admirers of the landscape in the vicinity may perhaps regret that the progressive spirit of the age should thus set at nought the associations of such localities. After leaving the junction, the line intersects several tracts of richly wooded scenery which abound on the banks of the Browney, and slopes of the Brandon Hills. Passing in close proximity to the residence of Major Cockburn, at Aldin Grange, the railway then brings to view the ancient ruins of Beaurepaire, with all their associations of monastic life and a past age. In this neighbourhood the traveller may find ample opportunities for contemplation. Here the forces of the third Edward and the Scottish army met in mortal conflict; but all traces of that gory field have vanished, and we seek in vain amid the calm of the surrounding landscape for even the slightest indication of that deadly struggle. After skirting the banks of the Browney, the line passes within an easy distance of the rural village of Witton Gilbert, and from thence up the beautiful valley of Lanchester, within view of that village. The two villages just mentioned are at present wholly without railway communication, and, doubtless, the inhabitants of the valley, and places further distant, will appreciate the advantages which the present line will place within their reach. The branch, after passing Lanchester, follows the course of the Browney for a distance of several miles, and ultimately reaches its destination near the extensive iron works at Consett. The difficulty of reaching the north-western parts of the country at present is generally felt by men of

business; and considering the importance of the district, the opening out of the present line will not only prove beneficial to the inhabitants along its route, but be a great facility to tradesmen and others generally.

From SHINCLIFFE STATION, the tourist can proceed on the

DURHAM AND SUNDERLAND BRANCH,

passing the intermediate STATIONS of SHERBURN, PITTINGTON, HETTON, MURTON, SEATON, RYHOPE, and HENDON, a *trajet* of about one hour and a quarter.

UNDERLAND and BISHOP-WEARMOUTH, though distinct parishes, now form one continuous town, well situated for shipping, on the south bank of the Wear at its confluence with the sea; and increased, as a great centre of population, by the numerous streets also spreading from the north bank of the river in the township of Monk-Wearmouth. The principal street is a spacious one, about a mile in length, with a gentle ascent from the vicinity of the river, where it is joined by numerous narrow lanes, leading down to the shipping staiths and quays. Elegant new streets have been made on either side, especially about the middle of its ascent, and towards the bridge. In the older and more extensive parts of the town, however, chiefly occupying the immediate vicinity of the river, the streets, or rather *lanes*, are of very different description, most of them being crowded and dirty, though the scene of some of the most thriving traffic of the port.

The borough contains numerous churches, chapels, and meeting-houses; a custom-house, mechanics' institute, exchange, banks, theatre, assembly rooms, charities, societies, &c. Sunderland is not celebrated for the architecture of its public edifices. The most admirable of these is the iron bridge, remarkable for its height and span, and peculiar lightness of construction, connecting it with the township of Monk-Wearmouth. This noble structure, built at an expense of £61,800, and

opened in 1796, consists of one vast arch, 236 feet in the span, and 100 feet in height, from low-water mark, allowing vessels of large burden to pass underneath with merely lowered topgallants. The intercourse between Sunderland and Monk-Wearmouth farther down the river is maintained by the constant transit of ferry boats.

Sunderland owes its importance to its situation upon the coast, at the influx of a navigable river flowing through a district remarkably rich in minerals, especially coal and lime. The harbour has been greatly improved of late years. It is formed by two piers on the north and south sides of the river. The new docks completed in 1850, enclosing eighteen acres, add greatly to the accommodation.

The principal manufactures of Sunderland are of bottle and flint-glass, anchors, chain-cables, &c., and shipbuilding and rope-making are carried on to a great extent. A large number of vessels are engaged in the coal trade. Lime, glass, and grindstones are also exported. Timber and iron are imported from the Baltic; butter, cheese, and flax from Holland, &c.

On the town moor are extensive barracks. A quarter of a mile distant, above the bridge, is the celebrated Pemberton Shaft, 279 fathoms deep.

The population of Sunderland at the census of 1861 is returned at 89,493. In 1851 the returns were 69,847.

On the 21st of May, 1861, the monument to General Havelock in the People's Park, at Sunderland, was inaugurated. The statue was uncovered, amidst the shouts of between twenty and thirty thousand people. The figure is cast in bronze, weighing 2 tons 15 cwt., and of colossal dimensions, being 10 feet 2 inches in height, and represents the hero as a general of the army, wearing the insignia of the Order of the Bath—the right arm extended, grasping the hilt of a sword, the left holding a telescope, and resting above the left hip. The drapery is a military cloak falling off the left shoulder. The detail of the model is remarkably accurate. The likeness has been pronounced by Lady Havelock to be all that the sculptor could achieve. It fully maintains the reputation Mr. Behnes has achieved for the remarkable fidelity of his likenesses. The pedestal is of grey granite, 12 feet in height. On the upper stone the simple word "Havelock" has been cut on the solid block, and on the base, "Born 5th April, 1795, at Ford Hall, Bishopwearmouth; died

24th November, 1857, at Dilkoosha, Lucknow." Standing on the top of the rocky eminence, the statue will be seen from the principal parts of the town. At sea, or in entering the town from the south or south-west, it will also be readily recognised.

From Sunderland there is a BRANCH LINE to SOUTH SHIELDS, and to NEWCASTLE by MONK-WEARMOUTH. *South Shields* is a parliamentary and municipal borough and seaport town, on the south bank of the Tyne, near its mouth. The principal public buildings of the town are the Exchange, the Town Hall, and the Church of St. Hilda. In this sacred building are several interesting monuments, and a model of Greathead's Lifeboat, presented to his native town by the inventor. There are several churches, chapels, and meeting-houses in South Shields, banks, charitable institutions, literary and other societies, a theatre, &c. The borough is in the parish of Jarrow, famous for its Benedictine monastery, of which a few remains may still be seen.

South Shields derives its name from the fishermen of the Tyne, who built sheds along the shore termed "shields," to defend themselves from the weather. The chief commerce of the town is with coal, great quantities of which are shipped from this port. Shipbuilding is also carried on, rope-making, glass-houses, chemical works, and breweries.

North Shields extends about a mile along the north bank of the Tyne, opposite South Shields.

We will now return to the

MAIN LINE

at LEAMSIDE STATION, and pursue our railway route to Newcastle. Two miles and a quarter from Leamside we reach FENCH HOUSES STATION. In the neighbourhood are *Great Lumley, Lumley, and Lambton Castles*, both of which last-named places we have described previously.

Two miles from FENCH HOUSES STATION is PENSHER JUNCTION STATION, where there is a BRANCH LINE TO SUNDERLAND and thence to Shields and Newcastle.

On the summit of Pensher-hill is a monument, erected in 1844, in honour of the late Earl of Durham.

The train, after leaving Pensher Station, crosses the river Wear, and

arrives at WASHINGTON STATION, one mile and a quarter distant. In the neighbourhood are *Barmstow* and *Usworth Place*.

Five miles from Washington Station is PELAW JUNCTION STATION, where there is a BRANCH LINE TO SOUTH SHIELDS AND TO SUNDERLAND. Three miles from Pelaw Station, we reach

GATESHEAD STATION. The ancient borough of Gateshead is on the south bank of the Tyne, connected to Newcastle by the low and high level bridges. Gateshead is supposed to have been coexistent with Newcastle, and during the Roman invasion was a fortified military station; it has not, however, kept pace with its sister borough in population or commerce. The principal thoroughfare is High-street, leading to Sunderland, and to Durham and the south. In the western district are several new streets, and on the sloping grounds of the Windmill Hills, Bensham, and the Team, are pleasantly situated numerous rows of houses, villas, &c. It is governed by a corporate body under the municipal Reform Act, and sends one member to Parliament. The town and suburbs are crowded with manufacturing establishments, including cement works, iron works, and the Tyne chemical works, Newall's electric telegraph wire works, glass works, &c. The parish church, St. Mary's, is of the date about 1450; Trinity Chapel (or St. Edmund's) is situated on the east side of High-street; St. Cuthbert's is a chapel of ease, and there are numerous Dissenting chapels, schools, charities, &c. The town suffered severely by the great fire and explosion in 1854, when property was destroyed to the amount of £300,000, and the buildings laid waste on the margin of the river have not been restored. The population returns of 1861 give 32,822 inhabitants, against 25,563 in 1851. *Gateshead Fell* is a parish to the south of Gateshead.

Leaving Gateshead station and passing through a short tunnel, we cross the magnificent High Level Bridge. On our right is the Low Level, or Old Bridge, and before us are seen most of the public buildings in the great town of Newcastle-on-Tyne; the Grey Statue, the ancient Castle, the Church of St. Nicholas, &c., together with the thronged quays, all are visible from this great height. On leaving the *bridge, the* train passes under the walls of the castle, and we are ushered *into one of* the finest stations in the kingdom. The building is in the

Romano-Italian style. The principal front, exclusive of the hotel, is 600 feet in length, and the passengers' shed about 700 feet, and 184 feet wide, covering an area of nearly three acres. The cost of its erection was about £120,000, defrayed by the York, Newcastle and Berwick, and the Newcastle and Carlisle Railway Companies. It was constructed from designs by Mr. John Dobson, architect.

The front of the offices facing the passengers' shed is concave, built of polished ashlar stone, the doors and windows having arched heads, with moulded imposts and archivolts. The roof is composed of circular iron principals, of an original design, divided into three compartments in width, and supported by metal columns, varying from 33 feet to 40 feet apart, and 23 feet high from the platform to the springing of the roof, and about 30 feet to the centre compartment. That portion of the building towards the west, divided by an iron railing, is occupied by the Newcastle and Carlisle Railway Company, and the remainder by the North-Eastern Railway Company. At the east end of the station, with entrances from the platform, is a spacious and elegantly furnished refreshment-room; an hotel is attached, replete with every requisite for the accommodation of families or travellers.

The station was opened August 29, 1850, by Queen Victoria, when passing on her way to Scotland.

Newcastle is one of the most prosperous and rapidly increasing towns of England, situated on the north bank of the river Tyne, 9½ miles from the mouth of the river at the German Ocean, 15 miles north of Durham, 56 east of Carlisle, 117 south-east of Edinburgh, and 273 north-north-west of London.

The lower portion of the town extends from Elswick on the west, to St. Lawrence and the North Shore on the east; it also occupies the steep slopes which, rising from the banks of the river, stretch towards the suburbs, occupying, on the north and east, a mimic tableland, and towards the west a rising ground covered with suburban dwellings.

The situation of the town possesses many remarkable features. The busy Tyne separates it from Gateshead, which bears a similar relation to Newcastle as Southwark does to London. There is, perhaps, no town in England whose present state and appearance are more in contrast with its earlier condition and character than Newcastle. It marks the eastern extremity of a wall which shielded the Roman legions from the

barbarians of the North. It has been the resting-place of many an army; and in later days of many a traveller, on the line of route from Scotland to the metropolis. It speckles the shores of the Tyne, and gives to that river the appearance of one continuous harbour. It is the outlet whence vast cargoes of manufactured produce find their way to the south of England and to foreign climes; it is the very centre of the coal district, and the birthplace of railways and locomotives. Its old castle and churches indicate its connexion with antiquity, while its ranges of houses and shops (such as no other town in England can excel, and few can equal) prove the spirit of modern activity and enterprise which animate its people.*

THE PLATFORM OF NEWCASTLE CASTLE.

The Census returns of 1861 for this town have just been published. As compared with the return of 1851 the number of the population shows an increase of 19,884, or rather more than 23 per cent. In 1841

* For many particulars respecting Newcastle we have to acknowledge our obligations to the intelligent local Guides of Mr. Thomas Oliver and Mr. William Fordyce, published by the authors at Newcastle. Our readers who desire to have more complete information respecting the "Metropolis of the North" than our limited descriptions can supply, should purchase these useful works. For our particulars respecting the Castle, we are indebted to the history of that celebrated fortress from the pen of the Revd. J. C. Bruce, D.D., the well-known antiquarian.

the numbers were 71,850, over which the figures of this year show an increase of 37,150. From the following statement it will be seen that the increase has taken place principally in the western portion of the town, the Elswick district having increased in particular very greatly. This is in a great measure owing to the number of men employed in the several large works situated there:—

	1861.	1851.
All Saints	29,490	26,117
St. John	9,140	9,858
St. Nicholas	5,571	6,586
Benwell	1,771	1,272
Westgate	21,275	16,477
Elswick	14,345	3,539
St. Andrew	17,101	15,643
Jesmond	2,230	3,089
Heaton	376	435
Byker	7,662	7,040
Fenham	89	100
Total . .	109,000	89,156

In addition to the above numbers, there were in vessels on the river Tyne, within the parish of St. Nicholas, 3,229 persons, thus making the total population of the town and port 112,229.

The history of Newcastle may be briefly mentioned. Various antiquarian remains prove the site of the town to have been that of a Roman station. During the Heptarchy the place became a prime retreat for monks, and, in consequence, obtained the graphic name of Monkchester. In 875 the monasteries were plundered by the Danes. In 1068 William the Conqueror encountered in Gateshead Fell, and completely defeated, Edward Etheling, and Malcolm, King of Scotland. Early in the reign of Stephen, the town by force, and the castle by treaty, fell into the keeping of David I. of Scotland, and they remained sixteen years under the Scottish Crown. Edward I. received at Newcastle John Baliol's homage for the crown of Scotland. The plague frequently ravaged Newcastle. In 1639 Charles I. remained twelve days at Newcastle at the head of an army, which he led against the Scottish Covenanters. During a year succeeding August, 1640, the

town was in possession of the Scots. Subsequent public events have, for the most part, had reference to architectural, municipal, commercial, and social improvements.

The CASTLE, whence the town has its name, stands in an irregular open area, called the Castle-garth, accessible by various crooked alleys.

In 1080 the erection of this citadel was commenced by Robert Curthose, eldest son of William the Conqueror, and the town having afterwards borne the name of Newcastle, it is inferred that previous to this time the site of the New Castle had probably been occupied by an older tower, erected by the Saxons from the remains of the Roman station. The Castle was used from the earliest times as a prison. Space will not permit us to enter into the early history of the fortress. In 1809 it was purchased by the Corporation in a state of sad dilapidation. Nothing was standing but the walls, from the vaulting of the dungeon upwards. It was repaired by the Corporation, and put into its present condition. The whole space occupied by the building is upwards of three acres. Besides the main entrance there were three smaller gates or posterns. The Keep is nearly square, and in height 97 feet. The thickness of the walls is very remarkable, measuring 17 feet in the lower parts, and 14 above. The gloomy and massive character of the pile must strike every beholder. The windows, which now

POSTERN GATE, NEW CASTLE.

appear in the second story of the western side, were made of late years, when the principal rooms on the second floor were adapted to the purposes of a corporation school.

ZIGZAG MOULDINGS IN THE CASTLE.

Before entering the Keep itself, an apartment, situated at the angle of the stairs, invites our notice, and according to the Rev. Dr. Bruce, the eminent antiquary, this may have formed the residence of the officer on whom devolved the duties of castle guard. A series of arches, which have been decorated with the characteristic mouldings of the period, relieve its walls; some of the

GUARD-ROOM IN THE CASTLE.

pillars which supported them remain. This is, perhaps, the best lighted

and most comfortable apartment in the whole edifice; the keep being quite independent of the tower or entrance, it was not necessary to guard this subsidiary building with the same jealous care as the citadel itself. Through a doorway formerly richly ornamented, we enter the Great Hall. Here some of England's kings kept their court, and Baliol did homage to Edward II. The room is a noble one, having an elevation of 41 feet. This apartment is lighted by a window in the northern wall, and by two windows of large dimensions. There was another window in the east side of the apartment, but which is now closed. In the upper part of the hall are the marks of some circular-headed passages that are now walled up. These communicate with a gallery that runs entirely round the building near its summit, in the thickness of the wall.

GREAT HALL OF THE CASTLE.

There is another small apartment in the hexagonal tower, entered by a few steps rising from the sill of the north window. The principal subsidiary apartment is in the southern wall. It is usually termed the King's Chamber, and has probably formed the sleeping-room of the commandant of the castle. The roof is of stone, vaulted. With reference to the windows that are in the south wall, it will be observed, on reference to *our engraving*, that a gallery runs in front of them in the thickness of *the wall*. This gallery descends on the one side by a flight of steps into

ewel staircase, in the south-east angle of the building; on the side, after ascending a eps, it is blocked up by e wall, seemingly of an- date. The Rev. Dr. considers that this gal- ould be useful in giving owmen ready access to indows in time of war, festive occasions min- and pipes may have their positions here with age.

THE KING'S CHAMBER.

will now ascend the idinal staircase. A few ring us to the aperture locked up) of the east w of the great hall. ding onwards we gain to the platform of the We can descend by piral staircase in the east angle of the building. This staircase goes perpendicularly to the bottom. We come to the entrance of the gallery of the eastern wall, and a step or two below, to the gallery which traverses its southern side. This gallery is about 17 feet from the top of the Keep, and in some parts is very narrow. Its prolonged arcade, and the strong lights streaming through the loop-holes, have a fine effect.

DOWS IN THE SOUTH WALL OF THE CASTLE.

Continuing our way down stairs, we arrive at a square-headed doorway, by which we enter the apartments in the second story. This is conjectured to have been the private residence of the commandant of the castle. The pillar in the centre of this particular apartment, and the arches which spring from it to support the floor above, are modern restorations.

GALLERY IN THE KEEP.

Descending from this chamber, at the foot of the stairs we enter a small dark room, incorrectly called the vestry, and then we come into the Chapel. The Rev. Dr. Bruce says, "that in all the mediæval fortifications he has visited in England, he has not seen any chapel that equals this in richness of decoration." The chevron, or zigzag moulding, is the prevailing ornament in this beautiful place of olden worship. It is profusely used on the arches, the windows, and the ribs of the groining. Against the east window of the chancel there are marks of an altar having been erected.

APARTMENT IN THE SECOND STORY OF THE CASTLE.

The principal apartment on the basement story is

entered by a door represented in our engraving. It is generally called the Dungeon, having been so occupied when the castle was used as a county gaol. The room is a very noble one, and the groins which support it rest upon a strong pillar in the centre of the room. This pillar is hollow, and through it the water has been conveyed from the well-room in the third story. A few steps at the back of the dungeon lead to another mural apartment in the north wall. Here the condemned prisoners were formerly kept, during the few hours that were then allowed to elapse between the passing of the sentence of death and the realization of its horrors.

DOOR OF THE DUNGEON.

Leaving this interesting relic of feudal times, we will now briefly allude to the other public buildings of this famous old town.

We will commence with the ecclesiastical buildings, and of these St. Nicholas' Church claims the pre-eminence. This fine edifice is conspicuously seated on the brow of a steep hill, which rises from the river nearly to the centre of the town. The church was originally founded in 1091, destroyed by fire 1216, rebuilt in 1359, and, with the exception of frequent repairs, it remains unscathed midst the storms and mutations of 500 years. It is now a magnificent Gothic building, the steeple of which is an object of great admiration. The tower at its base is about 36 feet square; at the angles are octagonal buttresses, which support square buttresses, terminating with brackets, above the height of the battlement, on which are placed statues of Aaron, David, Adam and Eve. This church contains several fine specimens of sculpture, a painting of Tintoretto, representing Jesus washing the feet of His disciples, *and a great variety of monuments.*

St. Andrew's Church, the oldest ecclesiastical edifice in the town, is situated on the west side of Newgate-street. The foundation is attributed to David, King of Scotland. The altar-piece is by Giordina, and represents the Last Supper. All Saints' Church is situated at the southern extremity of Pilgrim-street, and was erected in 1789 on the site of an old church. St. John's Church is in Westgate-street. It is a large cruciform structure, surrounded by a quadrangular embattled tower. The period when this building was erected is unknown. The interior contains an ancient font, several curious monuments, an altar-piece, and a painted window. St. Ann's Church is seated on elevated ground at the east end of the town. It is a handsome building, and the steeple is light and lofty. St. Thomas' Chapel, at the Barras Bridge, is a fine building, in the style of architecture prevalent in the reign of Henry VII. The tower from the ground to the platform at the top is 100 feet high. This edifice, built by the Corporation, was opened in 1830. St. Peter's is situated at the north-east end of Oxford-street. It is in the decorated style of Gothic architecture. St. Paul's, Rye Hill, near the Quarry, was erected in 1858. At Rye Hill, also, is the Virgin Mary Church, completed in 1858. It is in the Decorated style of architecture, and has a tower and lofty spire. There are several Roman Catholic places of worship, Dissenting chapels, meeting-houses, &c. There are also several cemeteries.

The Guildhall, on the south side of the Sandhill, was erected in 1658. The exterior of the building was renovated in 1794 and 1809. The court is entered by a staircase, at the foot of which is a statue of Charles II., in a Roman habit. The hall is spacious and lofty, and contains several portraits, including those of the Earl of Eldon, Lord Stowell, and Admiral Lord Collingwood, natives of the town. In the Mayor's Chamber may be seen the *branks*, intended formerly to restrain female volubility. The ground-floor of the building is occupied by the members of the Exchange News-Room. The Merchants' Court is on a level with the floor of the Guildhall.

The County Court is on the south-east side of the Castle-garth; it crowns the steep ascent at the north end of Tyne Bridge. It is a large and handsome structure. Trinity House, belonging to the Society or Guild of Master Mariners, is in Trinity Chase, Quayside. The building consists of a spacious hall, chapel, board-room, school, and lodgings for

the poor brethren. The Theatre, erected in 1837, is in Grey-street. The portico in front, designed from the Pantheon at Rome, forms a striking object in the view of Grey-street. Six Corinthian columns spring from the massive pedestals, and support a tastefully designed cornice and architrave, surmounted by a pediment, the tympanum of which contains the royal arms. The interior is tastefully arranged.

THEATRE ROYAL, NEWCASTLE.
(*From a photograph.*)

The Central Exchange forms the interior of the triangle enclosed by Grey Market and Grainger-street. The angles of the exterior form three circular temples, each crowned by a cupola, having elegantly carved parapets. The style of the exterior is a rich composite. The interior is of a semicircular form.

The Markets are very fine, and form, with the surrounding buildings in Grainger-street, Nelson-street, Clayton-street, and Nunn-street, a parallelogram of 400 feet by 306, enclosing an area of 13,906 square yards, and having entrances from the streets by which they are surrounded.

The Grey Column, erected in honour of Earl Grey, the Northumbrian statesman, stands at the head of Grey-street. A fine view of the surrounding country is obtained from the summit, on which is placed a statue of the Earl.

The Royal Arcade, an extensive pile of ornamental building, is situated

on the east side of Pilgrim-street. The interior of the arcade is a fine avenue, 250 feet long. In this arcade are the Savings Bank, Post and Excise Offices, Bankruptcy Court, &c.

The High Level Bridge, a stupendous structure, combines the two principles of the arch and the suspension bridge; the railroad resting upon the ribbed arches, and the carriage-road and footpaths being

HIGH LEVEL BRIDGE, NEWCASTLE.
(*From a photograph.*)

formed by suspension from the ribs. The floor of the railway is thus the roof of the suspended bridge, which resembles a vast gallery or aisle. The distance from pier to pier is about 125 feet; the length of the bridge is 1,337½ feet; length of waterway, 512 feet; height from high-water to suspended carriage-road, 85 feet; to the railway, 112 feet; weight of the entire structure, 5,000 tons. This noble bridge is one of Mr. Stephenson's greatest engineering achievements.

The Ouseburn viaduct was erected in 1839 as a high level for the Newcastle and North Shields Railway, and is now the line by which all trains proceeding east or north from Newcastle must pass along. The bridge consists of nine arches; the height is 108 feet, length 750, width 22 feet. The Willington Dean viaduct, about three miles further east, is of similar construction.

The Town Hall Buildings are erected on the north side of St. Nicholas'

square. The area behind is the Corn Market. The Assembly Room is in a recess, on the north side of Westgate. The Barracks are extensive, occupying an area of 11 acres of ground, in a healthy position. The Gaol (and House of Correction) is a large, massive building in Carliol-square. The Northern Counties Institution for the Deaf and Dumb was established in the year 1839, for the education and training of the deaf and dumb belonging to the four northern counties of England. Children from other parts are, however, admitted. It contains at present

NORTHERN COUNTIES INSTITUTION FOR THE DEAF AND DUMB, NEWCASTLE.

about sixty pupils, and is on the eve of removing to a noble and commodious structure, erected at a cost of nearly £6,000, and situated on the North-road, about a mile from the town. The building is capable of accommodating 100 pupils. The south wing is appropriated as the residence of the Head Master, and contains superior accommodation for children of the higher classes, to whom it offers all the comforts of a home.

The grounds extend over nearly seven acres, and thus afford ample space for playgrounds, gardens, &c. William Neill, Esq., is the Head Master, to whom any communication with reference to the Institution may be addressed.

It would be impossible in our necessarily limited space to enumerate even a portion of the numerous institutions, societies, schools (endowed

and otherwise), charities, &c., in this great town. We must refer our readers to the excellent local Guides, in which due mention is made of everything interesting to the town and neighbourhood. The railways which unite and centre in Newcastle, are, 1st: The Newcastle and Carlisle Railway, which stretches across the island, from sea to sea, pursuing the course of the river Tyne to the west of Haltwhistle, and passes south of Brampton. This railway was opened throughout, from the Redheugh Station, near Gateshead, on June 18, 1838, and from the station at Newcastle, May 21, 1839. The parliamentary survey was under the superintendence of Mr. Benjamin Thompson, engineer, and the construction and execution of the line under the direction of Mr. Francis Giles, of London, engineer, who was succeeded by Mr. John Blackmore, engineer. The extension from Railway-street to the Junction Station was executed under the direction of Mr. Peter Tate, engineer. A branch of this railway unites Gateshead with the Redheugh Station, meeting the main line at Blaydon, five miles west of Gateshead.

2nd. The *Newcastle and North Shields Railway* was opened June 18, 1839, and the extension to Tynemouth March 31, 1847. This railway was constructed by, and completed under the direction of, Mr. Robert Nicholson, engineer; and the Ouseburn and Willington Dean viaducts, on this line, were designed by, and completed under the superintendence of Messrs. John and Benjamin Green, architects and engineers.

3rd. The *Newcastle and Berwick Railway*, for which an Act of Parliament was obtained in 1845, was opened throughout, on the 1st July, 1847. This railway unites, by means of the High Level Bridge, the railways which terminate in Gateshead, with those in Newcastle. After passing over the viaducts in Newcastle, and making use of a portion of the last-mentioned railway, it takes off northwards towards Scotland. This railway, together with the High Level Bridge and adjoining viaducts, were constructed by, and carried into execution under the direction of Mr. T. E. Harrison, the resident engineer, with the assistance of the late R. Stephenson, Esq., consulting engineer.

4th. The *Newcastle and York Railway*.

5th. The *Brandling Junction Railway* received the royal assent July 21, 1835, to an Act of Parliament granted to John Brandling and Robert William Brandling, Esqs. On the 7th June, the following year, an act of incorporation to a company of shareholders was obtained

for this line of railway, which proposed to unite Gateshead with South Shields and Sunderland, and with the Durham Junction Railway. The line from South Shields to Sunderland was opened June 18, 1839, and the entire line on the 5th September the same year. The chief engineer for the construction of this railway was Mr. Nicholas Wood, and the resident engineer was Mr. Ralph Coulthard.

Newcastle to Wallsend, Chirton, Shields, Tynemouth, &c.—From the Central Railway Station a train leaves every hour for Tynemouth, stopping at the intermediate stations, including that of North Shields. Passing Heaton Hall, recently the seat of Sir Matthew White Ridley, Bart., we reach at four miles' distance, *Wallsend* station and village, and the celebrated *Wallsend Colliery*. The great *Roman Wall* terminated here, in a field east of Carville, near the residence of the late John Buddle, Esq., where many curious Roman relics have at various times been found. Proceeding along the lofty viaduct of Willington Dean, a fine building, the train stops at Howden Station, and on the south are the extensive docks, at Hay Hole. The high mounds on the south side of the railway from Newcastle to Shields are ballast heaps, being the ballast brought from London by light colliers. Between Percy Main station and North Shields, on the north side of the road, is the village of Chirton, where Gardner, author of "England's Grievances," resided; and passing the conspicuous mansion fronting the south, the property of the late Lord Admiral Collingwood, we reach *North Shields*, a large and opulent port, advantageously situated at the junction of the Tyne with the German Ocean. Near Clifford's Fort is a low light-house, corresponding to another on the top of the bank, which together serve as a guide to vessels entering the harbour. The principal trade of the town consists in the manufacture and sale of articles connected with shipping. North Shields, in conjunction with Tynemouth, was made a borough by the Municipal Reform Act, and returns one member to Parliament. About a mile further east we reach Tynemouth, being nearly eight miles distant from Newcastle. The village of *Tynemouth* occupies an elevated site, and contains a number of well-built houses, and a light-house and military barracks within the castle yard. Tynemouth is a delightful marine retreat, and much resorted to for sea-bathing. On a bold promontory stand the ruins of *Tynemouth Priory*, and the remains of this venerable monastery afford

a conspicuous landmark to the sailor, as well as a subject of no ordinary interest to the artist. Along the coast northward are the villages of Cullercoats, Whitley, Monkseaton, Seaton Delaval, Hartley, and the shipping port of Blyth; also, the Fern and Holy Islands, and Warkworth and Dunstonborough Castles, &c.

RUINS OF TYNEMOUTH CHAPEL AND PRIORY. (*From a photograph.*)

Steam-boats leave Newcastle for North Shields every hour. By this route a better view will be obtained of the extensive and numerous factories erected on the banks of the Tyne, and of the shipping of the port, the docks, coal staiths, &c.

OMNIBUSES are kept at a few of the principal inns, and are used for conveying passengers from and to the different railway stations, at a moderate charge for each passenger. HACKNEY COACHES AND CABS are to be found waiting for orders at the sundry stands fixed for them; one of the principal stands being St. Nicholas' Square; the others are in Westgate Street, Blackett Street, and Percy Street. These vehicles are drawn by two horses: the charge is one shilling for the first thousand yards, and sixpence for every additional seven hundred yards, or portion thereof. Two passengers can be taken for the above fares. The cabs are drawn by one horse, and may be obtained at the above stands.

COMMERCIAL ASPECT OF NEWCASTLE

Newcastle is the centre of the great northern coal-field, and it is, doubtless, owing to the facility of procuring a cheap and abundant supply of coal, that the town and neighbourhood are indebted for the establishment of the numerous large and prosperous manufactories, which crowd the banks of the Tyne and the surrounding district; and to this may be added, the advantage of having a noble river which affords ample navigation to vessels of considerable burthen.

The manufacture of glass was commenced at Newcastle about the close of the 16th century, and though removed for a time to Stafford, was brought back to Newcastle, and has long been a chief employment in the town. Glass of all kinds is made here. Potteries are numerous, and in some instances large. There are several extensive chemical works, situated on the margin of the river. The lofty chimney stalks of these manufactories form a marked feature in the urban landscape, and, owing to the flatness of the surrounding country, are seen at a great distance. The manufacture of

steam-engines, mill-work, and other machinery, employs an immense number of workmen. Extensive Iron Works exist, for forging, for rolling, and for casting iron. There are various departments of leather manufacture, soap works, sail-cloth factories, iron and wood ship-building yards, paper mills, brass foundries, stove-grate factories; also, coal-tar, lamp-black, copperas, and vinegar works; linseed-oil mills, saw and bone mills, &c. &c. The foreign export trade chiefly consists of the mineral and manufacturing productions of the neighbourhood. The leading articles of export are coals, cinders; wrought, cast, pig, and bar iron, and steel; machinery and locomotive engines; plate, flint, and crown glass; glass bottles, watch glasses, and earthenware, soda and chymicals, copperas, lamp black, coal tar, soap, linseed oil, vinegar, oil of vitriol, and painters' colours; silver bullion, pig and sheet lead and lead shot, red and white lead, sail-cloth, linen yarn, woollen goods, leather gloves, cotton twist, and cordage; bricks, fire clay, fire bricks, grindstones, &c.

The principal articles of import are grain, oak, bark, wine, spirits, cheese, apples, oranges, lemons, dried fruit, spices, tobacco, sugar, tea, coffee, skins and hides, rags, flax, hemp, timber, deals, buttons, staves, masts, corkwood, brimstone, tar and pitch, tallow, grease, butter, oil, turpentine, linseed oil, clover and other seeds, bones, bristles, &c.

The River Tyne Commissioners are adopting measures for improving that river, with a view to afford accommodation to its vast and increasing trade, the Tyne having, next to Liverpool, the largest export trade in the United Kingdom. In addition to the Northumberland Dock, the Commissioners have a Bill before Parliament to form a dock at the Low Lights, and to carry out an extensive plan of river improvement. The North-Eastern Railway Company are also making arrangements for extensive warehouse accommodation for imports from the Baltic, to be brought to their Tyne Docks by a fleet of steamships belonging to the Diamond Company, who have just commenced to run their vessels to Cronstadt and other ports in the Baltic. On June 2 (1861), the largest dredging machine in the world was launched at Glasgow for the River Tyne Commissioners. It has been fitted with engines of 60-horse power. The whole of the machinery and gearing are on board in complete working order, causing the vessel to weigh *700 tons*. There are two bucket-ladders, which are of sufficient length

to dredge to the depth of 33 feet, being about 10 feet more than has hitherto been attained.

Forth Banks Engine Works, the Property of Messrs. R. and W. Hawthorn.

The works of this eminent engineering firm were originally established in 1817, by the present senior partner, Mr. Robert Hawthorn, for the manufacture of steam-engines, millwork, and other machinery. Mr. William Hawthorn became a partner with his brother in June, 1820, since which, the works have been progressively extended with the development of engineering science, and are now among the largest and most justly-celebrated establishments of the kind.

The number of workmen employed exceeds 1,000, and the general arrangements are adapted for manufactures of the most extensive kind.

Entering the premises from Forth Banks, we pass some offices on the right, and descend to the Machine and Fitting Shops, full of costly Turning, Planing, Slotting, and Screwing Machines. From this department we proceed to a spacious Erecting Shop, in which are some fine radial and other large drilling-machines at work, and several rivet-making and tobacco-cutting machines, as well as marine and waterwork engines, in course of construction.

At the period of our visit, we saw here three pairs of 90-horse power marine screw engines, and three of 70-horse power, being erected for iron vessels building on the Tyne.

Here also are manufactured the Surface Condensing Marine Engines on J. F. Spencer's Patent, a pair of which has recently been successfully applied in a vessel owned by an enterprising firm, Messrs. Laing and Stephens, trading between London and Newcastle. Adjacent to this part of the premises are several other large Fitting and Machine Shops, filled with machinery. On the left are four large locomotive wheel shops. The construction of wheels for locomotive engines has from time to time varied, and been greatly improved; of later years they have nearly altogether been made of forged pieces ingeniously put together, and the spokes, nave, and rim welded into one solid piece then turned on the rim to receive the tyre with flange; afterwards the boss or nave, and tyre, are very perfectly turned and finished.

Near the Locomotive Wheel Shops are the COPPERSMITHS' and BRASS FINISHERS' SHOPS, and, on our left, is the GREAT LOCOMOTIVE ERECTING SHOP. Locomotive engines differ considerably from other steam-engines in their mode of construction, as it became necessary to introduce numerous modifications in order to render them suitable for a rapid transit. Among the foremost of these is the combining of the engine and boiler together. The latter is also formed of much less dimensions in proportion to its power, and the size of the cylinders is reduced. The several parts of the framing are also secured together in a stronger manner, whereby the whole is rendered proof against the sudden shocks and strains to which it is subjected. The motion of the piston rods is transferred to the wheels, either by connecting-rods fixed upon one of the spokes of the wheels, or by cranks fixed upon the axles.

The *motion of the engine*, as it is termed, comprises the cross-head, being the part to which the piston rod is fitted at one end, and the connecting rod at the other; the cross-head guides, or *motion bars*, consisting of parallel bars and cross-head blocks, which slide between the parallel guides, and to which the ends of the cross-head are fitted.

The power of a locomotive engine varies according to the velocity with which it is propelled; and it cannot be estimated in the same manner as other engines—viz., taking the actual force upon the piston and the velocity of its motion, as it is very difficult to ascertain the effective pressure of the steam upon the piston. It often differs very considerably from that in the boiler, on account of the large amount of resistance of the waste steam, owing to the great velocity with which the piston moves. The only true method, therefore, of determining the power of a locomotive is by experiment.

A locomotive engine by Messrs. Hawthorn, shown at the Great Exhibition of 1851, attracted great notice, from having been, some years ago, one of the first successful attempts to obtain dry steam from a low boiler, by means of a long steam-pipe running along inside the boiler near the top, and perforated with small holes or slits, which draw the steam off without taking the water as well. The arrangement of the springs, also, is peculiar; for though a six-wheeled engine, yet the great weight is carried on bars reaching from one axle to the other, and thus

THE "GREAT EASTERN" RECEIVING SHIP OF THE ATLANTIC CABLE, AT SEA.

any wheel passing over an irregularity on the rails only lifts each supporting spring half the amount due to this irregularity.

In this department are two enormous Travelling Cranes, one of fifteen, and the other of ten tons. The BOILER SHOPS are near to this, one of the most important branches of this immense manufactory.

One great desideratum in the steam-engine appears to be in the formation of a good boiler; one capable of generating the greatest quantity of steam, with the least amount of fuel, yet secure from explosion. They should be constructed with a view to provide against rupture, or rather, that in the event of the engine receiving a shock sufficient to rupture the boiler, it should occur in that part best calculated to prevent loss and accidents, particularly in those for locomotive purposes; small boilers are, therefore, considered the best. If a large boiler, with large tubes of separation, bursts, the risk of damage and loss of life is much greater than in the case of a small chambered boiler, as these tubes, being small, act as so many safety-valves, and occasion nothing more than a stoppage. The reason of the boilers of locomotives so seldom bursting, is mainly attributable to the slightness of the tubes, which are constantly the parts soonest affected in the event of any unusual strains, when they merely let the water down upon the grate, and put the fire out. Their wear is consequently very great; but if they were made sufficiently strong to resist, the sides of the boiler might be reasonably expected to burst, which would be attended with greater consequences.

We have not space to describe all the different branches of the manufacturing art pursued on these premises. The operations are on the most extensive and elaborate scale, as the visitor will perceive on making his journey through the works. We can only allude to the department for RIVETING MACHINES (by which the rivets or iron pins are put on in a red-hot state, whereby the greatest degree of closeness is obtained in the joint by the contraction of the metal in cooling), and STATIONARY ENGINES FOR THE FAN BLAST, the FORGE, with its *three-ton steam hammer*, the Smithy with its fifty or sixty fires and two Steam Hammers, the TENDER SHOPS, the enormous TIMBER YARDS (close to the Newcastle and Carlisle Railway), PATTERN SHOPS, with Lathes and Circular Saws, and a fine Endless Bandsaw, the CARPENTERS' SHOPS (one of them 150 feet in length, by 30 feet in

breadth), the Locomotive and other DRAWING OFFICES, with artists constantly employed in making designs, the MARINE and other Drawing Offices, SUPERINTENDENTS', MANAGERS', and CASHIERS' OFFICES.

Newcastle has, indeed, reason to be proud of this enormous establishment, there being few equal to it in the United Kingdom, and we recommend these Works not only to the mere sight-seer or scientific amateur, but also to the engineering public, as an establishment in every way worthy of consideration. We find also that Messrs. R. and W. Hawthorn are the principal partners of similar Works at Leith and Granton, near Edinburgh, carried on under the designation of Messrs. Hawthorn and Co. At these Works 500 men are employed.

THE TYNE CHEMICAL WORKS, THE PROPERTY OF MESSRS. ALLHUSEN AND SONS, GATESHEAD.

The Tyne separates Newcastle from Gateshead, the latter being to the former what Southwark is to London, and the river exhibits, on both sides of its banks, a continued succession of factories. Of these seats of manufacture the Chemical Works are the most conspicuous, from the enormous height of their chimneys.

At Gateshead are situated the TYNE CHEMICAL WORKS, one of the largest of the kind in the kingdom. They were originally established by Mr. Charles Attwood, and became the property of Messrs. Allhusen and Sons about twenty years ago. The number of men employed exceeds 700, and the steam used is 210-horse power.

On approaching the Works, it is soon evident that they are of a class where a large number of buildings are spread over a great area of ground, rather than exhibiting one huge erection, such as is often seen in the cotton districts. Narrow passages and square courts separate these buildings, whose variety and multiplicity must make every one sensible of the magnitude of the works.

Sulphur and common *salt* are now the two great agents in the production of the chemicals in most familiar use. Sulphuric acid or "oil of vitriol," "chloride of lime" or "bleaching powder," "muriatic acid" or "spirit of salt," the soda-ash employed by glass-makers and soap-makers, the soda employed in washing—all result from certain modes of applying one or other of these cheap and abundant substances; *these are* precisely the commodities most generally made at chemical

THE TYNE CHEMICAL WORKS, THE PROPERTY OF MESSRS. ALLHUSEN AND

works, and nothing can more beautifully illustrate the general character of chemical composition and decomposition, than the steps by which one substance becomes transformed into another, as developed at a chemical work.

The immense business done at the Tyne Chemical Works may perhaps be conceived, when we mention that more than 600 vessels are annually discharged there. Of 78,000 tons of salt used on the Tyne in one year, about 16,000 tons are converted by Messrs. Allbusen and Sons into the various products manufactured by them, which amount weekly to nearly 500 tons of crystals of soda, bicarbonate of soda, alkali, and bleaching powder.

The consumption of coal reaches the large quantity of 70,000 tons per annum, that of sulphur being 4,400 tons, and chalk 30,000 tons. The gas and bricks used are made on the premises. Nearly one hundred coopers are employed in making casks.

The increase this establishment has undergone, under the present proprietors, will be understood, when we state that in 1840 the salt converted into sulphate of soda was only 1,500 tons, being less than one-tenth of the present consumption. The premises now comprise about one hundred acres of land, of which a great portion is covered with buildings and railways.

On entering these immense Works, we see, on the left of the road, the large Wood Yards; passing which, we reach the Salt Warehouses, and ascend to the tramway used for the conveyance of coals, wood, &c. On the right are the extensive Brick-fields, and on the left the Gas-works, and the bleaching powder manufactory. This is chemically called chloride of lime. It is now used to a large extent in different branches of manufacture; the lime being merely a vehicle for containing the chlorine, the remarkable chemical effect being due to the latter only.

Near to the manufactory for bleaching powder are the lime-kilns. Passing along the tramway, (having near us, on our left, numerous coke ovens,) we descend into the Works. Before us is one of the gigantic chimneys, 200 feet high, belonging to the Works; and near it is the Hydrochloric acid Condenser, the largest of the kind in the world, by means of which the whole of the gas generated in the decomposing pans is *condensed* into liquid hydrochloric acid. We now proceed to the

Decomposing Houses, where sulphate of soda is produced, by the application of sulphuric acid to common salt. This, after calcination with chalk and coal, yields black ash, or crude soda.

Most remarkable have been the changes in the mode of producing this useful alkali. Some years ago, the duty on salt (now employed in the manufacture) was almost unprecedentedly high: it amounted to £30 per ton; whereas the commodity can, at the present day, be purchased at Liverpool for ten or twelve shillings per ton: that is, the duty was once fifty or sixty times as great as the article itself can now be actually bought for! Under these circumstances, the production of soda from this substance was very limited. At that time soda was generally prepared from *kelp*, a kind of sea-weed found on the shores of the Scottish Highlands and Islands. *Barilla*, obtained from the ash of an Italian sea-weed, was also employed for the same purpose, but common rock-salt has now nearly superseded the latter, and wholly so the former.

Common salt is chemically designated chloride of sodium; common soda is chemically carbonate of soda; and the process of manufacture consists in separating the sodium from the chlorine, and making it the chief element in a new compound. It instructively illustrates the way in which one chemical process necessarily involves another—that the very same operation which leads to the production of carbonate of soda from one element of the salt, leads to the production of muriatic acid from the other.

It is impossible, in our limited space, to enumerate even a quarter of the numerous departments in this huge manufactory.

We may add that the reputation of the Tyne Chemical Works is extensive both at home and abroad, and that the proprietors received a *médaille d'honneur* at the Paris Exhibition.

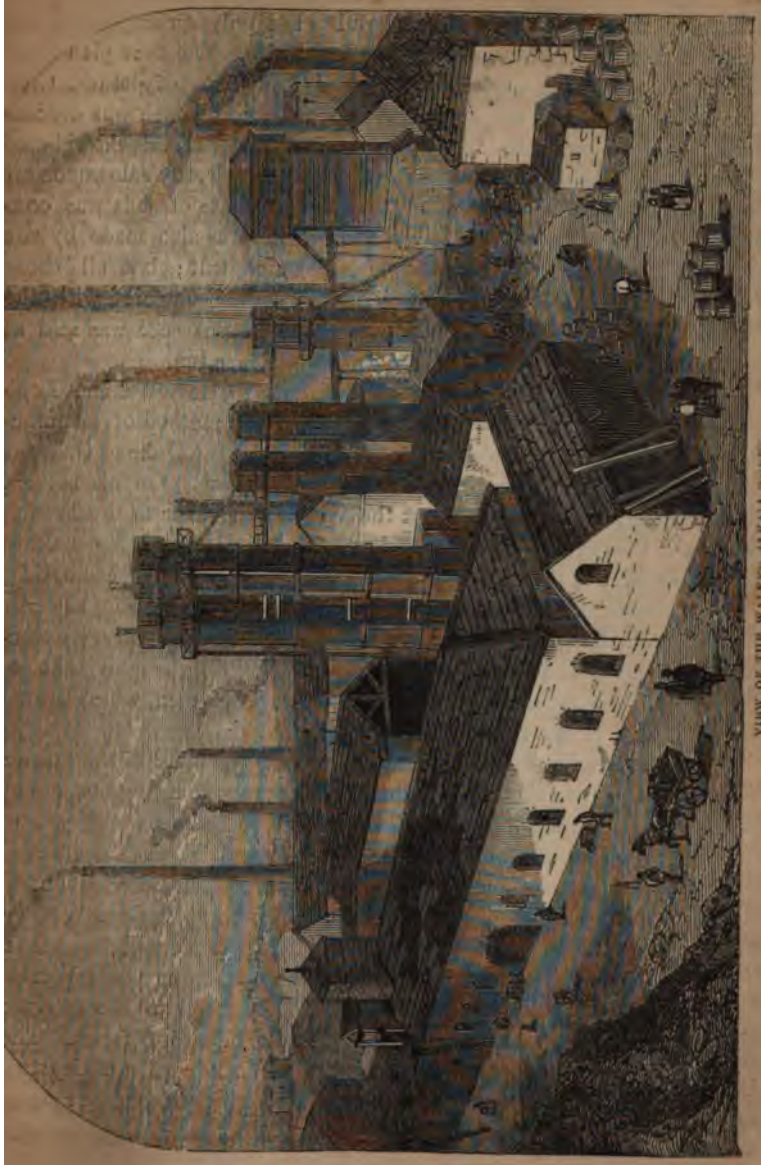
Mr. Allhusen, the senior of this firm, was one of the influential movers in the attempt to obtain the free admission of chemical productions into France; a step which, though only partially successful, it is supposed, will confer a great boon upon the manufacturers of chemical productions, as soon as the new tariff comes into operation; and from the well-known qualifications of this gentleman, we are safe in stating that no better choice of a representative could have been made.

The Walker Alkali Works.

Our readers will remember that the Alkali Works of Newcastle-upon-Tyne are almost peculiar to this neighbourhood, and are among the most remarkable and interesting manufactures that can be seen anywhere. To reach the Works now under notice, the visitor should take boat at the Quay, and proceed down the Tyne. After passing Felling Shoe Bill Quay, we land at St. Anthony's, and walk to the Works, about half a mile distant. The Offices are in Dean-street Newcastle.

These Works are connected with the earliest stages of the Soda manufacture, being one of the first (if not the oldest) established in England.

The Walker Alkali Works were commenced in 1796, a grant having been obtained from the Government, for the purpose of making the salt required in the manufacture of alkali, which was then obtained from a brine spring found in a coal pit, on the site of the present Works. From the high duties levied upon salt, the price of that article was at that time about £36 per ton, whereas its present value is only 15s. or 16s. per ton. In 1791 Mr. William Losh resided in Paris and while pursuing his studies, as a young man, became acquainted with several of the leading chemists of the day, and his attention was directed to the importance of making soda; and on his return to England a Company was formed with this object in view, the original partners being Lords Dundas and Dundonald, Messrs. Aubany, John Surtees and John and William Losh, the latter of whom is now the senior partner of the present firm. The processes in operation at that time for the manufacture of soda were very different to those now in use, and were carried on, under many difficulties, which in the present day are unknown. The first plan adopted was the decomposition of the grey oxide of lead by common salt, forming insoluble chloride of lead, and caustic soda; the latter salt was afterwards carbonated, and produced exceedingly pure crystals of soda, but a difficulty arising in getting the chloride of lead white and pure, and suitable for a pigment, this process was at the time abandoned, and, at the suggestion of Lord Dundonald, another plan was adopted; namely, the decomposition of sulphate of iron (copperas) and common salt. The sulphate of soda was fluxed with coal, and formed a sulphuret of sodium; this was then



VIEW OF THE WALKER STAITH STORE.

carbonated with sawdust, but the result gave only an imperfect and impure carbonate of soda, and was abandoned also. The next plan tried and suggested by Mr. Losh was the use of sulphate of potash, then made in the making of sulphuric acid in a small way, which was decomposed by common salt, forming sulphate of soda and chloride of potassium, and the chloride of potassium found a ready sale amongst the alum makers of Yorkshire. While the sulphate of soda was converted into carbonate of soda, carbonate of soda was also made by the decomposition of impure potashes and common salt; but all these processes were carried on to a very limited extent compared with the present method, and could only be pursued so long as soda was sold at the high price then obtained, namely, about £60 per ton.

After the conclusion of peace at Paris in 1816, Mr. William Losh again visited France, and there saw the improved method of manufacturing soda which commenced under the auspices of the Duke of Orleans, and was then carried on to some extent in France. On his return, he immediately proceeded to adapt the Works at Walker to the French plan; and though the erection of large leaden chambers for making sulphuric acid was then thought an extravagant and mad scheme, Mr. Losh persevered, and soon succeeded in considerably cheapening the cost of the manufacture; and, with the cheap price, the demand very extensively increased, and many extensive works, giving employment to large capital, and, on the Tyne alone, to about 4,000 men, which shows the importance of the trade.

One of the chief objections to Soda Works, in the mind of the public, for many years, was the damage done to the surrounding vegetation by the unchecked liberation of the muriatic acid gas, from the decomposition of the salt employed, immense quantities of which passed continually into the atmosphere. Many plans have been carried out to obviate this, and one of the newest of these is now at work at Walker, where the muriatic acid has been almost entirely condensed; and from a scientific examination which has lately been made at these Works, the escaping muriatic acid gas was found to be reduced to the extreme minimum, and at present does no damage to the adjoining farms. The articles now extensively manufactured at these Works consist of Crystals of Soda, Refined Alkali and Soda Ash, Hyposulphite of Soda, or Anti-*Chlor.*; Bleaching Powder, or Chloride of Lime; Concentrated

Sulphuric Acid; Patent Size for Papermakers, &c.; Sulphurous Acid: and, from the long-established reputation of the concern, all these articles find a ready sale.

Messrs. Isaac Charles Johnson and Co., Manufacturers of Portland Cement, Roman Cement, Keene's Cement, Plaster of Paris, Patent Mastic, and Blue Lias Lime.

The Cement Works of Messrs. Isaac Charles Johnson and Co. are situated at South Shore, Gateshead. The proprietors have, also, extensive premises at Cliffe, on the Thames, near London, and offices in the metropolis at 28, St. Mary-at-hill, City.

The Works at Gateshead are very extensive, employing several hundred workmen, and steam of 150-horse power. The management is under the personal superintendence of Mr. I. C. Johnson.

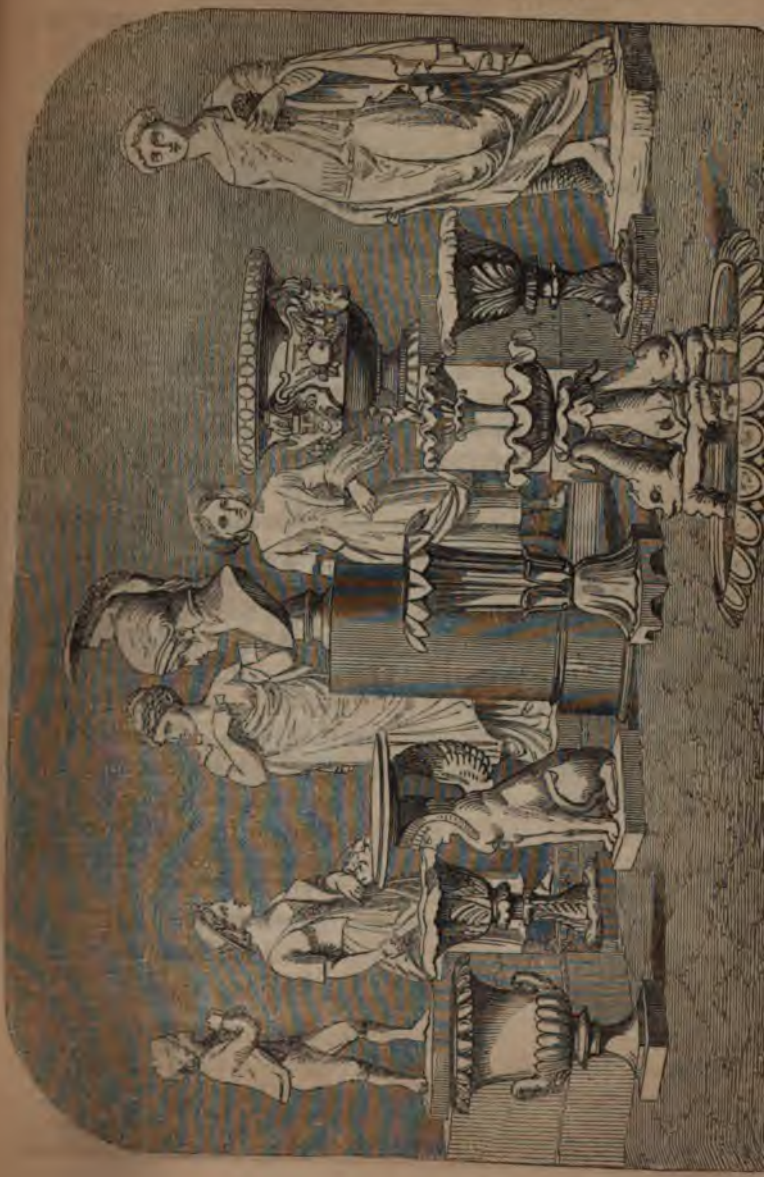
These premises have a frontage of considerable extent on the Tyne, and are well situated for the export of goods to all parts of the world. The materials used in the manufactory, chalk and clay, are brought here, and conveyed to the grinding mills.

Here these materials are varied with other ingredients which, of course, constitute the value of the cement, and are not divulged. The grinding process finished, the mixture is hoisted, by machinery, thirty feet, into large cisterns. From this department we proceed to the "tanks," which are full of the cement in a certain state of consistency. These masses, when consolidated, are passed to the Drying Stoves or Coke Ovens. The cement is afterwards conveyed to the Kilns, where it is thoroughly burnt. We are next invited to see the gigantic Grinding Mills, worked by a steam-engine of 90-horse power. The cement is afterwards mixed and sifted, and then transferred to the packers and coopers to be put into travelling shape.

The visitor should not fail to see the department in which the Plastic and Keene's Patent Cement are made. Messrs. Johnson and Co. have the privilege of working this valuable patent.

In this part of the premises will be seen immense Grinding Mills and other Machinery.

The Portland Cement is one of the most valuable articles manufactured by Messrs. Johnson and Co. Its remarkable qualities may be mentioned as follows:—



It is greatly superior to all other cements ever offered to the public—

1st. In its power to resist compression and to bear strain. In this it is as three to one compared with other cements. This property renders it invaluable for foundations, and for building walls and arches in brickwork; for the former purpose seven parts of gravel may be used to one of cement to form concrete—for the latter, three or four parts of clean sharp sand to one of cement may be employed. Its extreme hardness and durability render it also exceedingly useful for flooring domestic and agricultural buildings.

2nd. Its hydraulic character. It resists the solvent action of water; it does not become decomposed or disintegrated by immersion in that liquid, either fresh or salt; it can therefore, with perfect safety, be used in the formation of Sewers, Water Tanks, Reservoirs, Canal or Dock Walling, Harbour Works, Breakwaters, or for any other similar purpose.

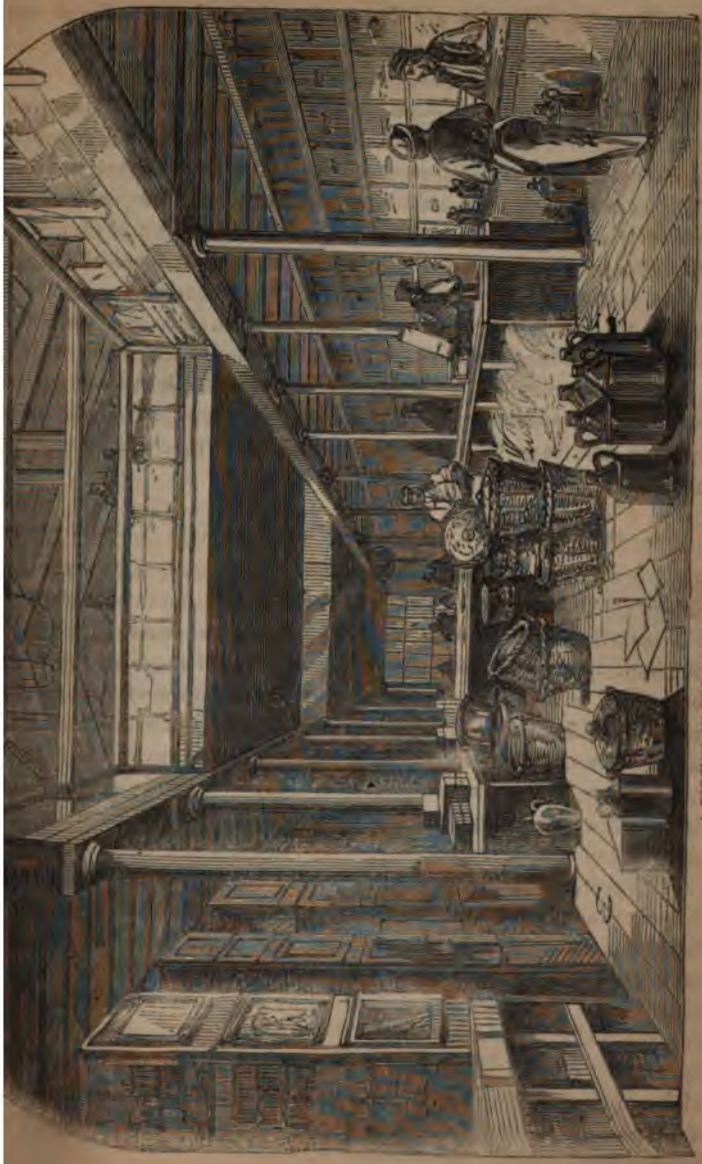
3rd. In its colour. All other cements are either dark brown or black, consequently require to be frequently coloured. This article, however, is of a grey stone colour, and does not require any colouring more than it possesses in itself; it does not vegetate, nor is it liable to oxidation; once properly done, it retains its appearance under all circumstances, and in all climates. This quality renders it particularly suitable for stuccoing the outside of public and private buildings—as well for ornamental or for plain surface. Its non-porous character does not admit of those vegetable deposits which cause that green appearance in the fronts of even stone buildings; it is therefore superior to stone.

4th. In its power to resist the action of frost. This cement, used during the existence of frost, is not destroyed by it as other cements are.

Messrs. Johnson and Co. are also manufacturers of Figures, Chimney-Pieces, Vases, and all articles that can be made from the valuable materials they possess.

Mr. John Ismay, Wholesale Druggist, Drysalter, and Oil Merchant, Newcastle-upon-Tyne.

This business, now carried on in the Groat Market, was originally *established* at the Sandhill, in the early part of last century. It had



A PORTION OF THE INTERIOR OF THE PREMISES OF MR. EMAT.

there, for a long time, in addition to the wholesale premises, a spacious Dispensing Establishment, ornamented, according to the fashion of the period, with stuffed alligator, &c. &c.

These premises, with a large portion of the lighter and more valuable stock, were destroyed by fire in 1857. The oil and heavy goods warehouses, being situated at a considerable distance, were not affected.

The business is now exclusively wholesale, and the present premises in the Groat Market, immediately opposite the Town Hall, attract the attention of all who visit that part of the town, from their unusual extent, and from the facilities which they possess for loading and unloading, and storing the large stocks which they contain, of drugs, oils, dyers' chemicals, and other goods, commonly termed drysalteries.

In addition to the great facilities possessed, no effort is spared to supply the trade with the varied articles referred to of first-class qualities, and thus to sustain the large and well-earned reputation of the House.

Messrs. Atkinson and Philipson's Coach Manufactory.

We are indebted to the "Newcastle Guardian" newspaper for the following particulars (abridged) of this eminent manufactory.

Newcastle possesses one of the largest coach manufactories in the kingdom. This establishment, which was commenced about sixty-five years ago, is situated on the east side of Pilgrim-street, and is the property of Messrs. Atkinson and Philipson—a firm whose standing and reputation, in their peculiar department, are proverbial throughout the country. Their manufactory is surpassingly interesting to the visitor, affording, as it does, employment to nearly two hundred men and boys, in an art at once elegant and useful to all classes.

The premises have been rebuilt within the last twenty years, and are therefore modernized and arranged in a manner admirably adapted for the varied and extensive operations of the proprietors. Entering by a spacious court, the visitor is conducted to two long ranges of buildings running east and west, and connected by a cross section at the east end. The north side measures 180 feet long by 60, and is three stories high; the east or cross section 100 feet long by 30, and is also three stories high; the south 280 feet by 60, and of a lower altitude; and both the *north and* south, or principal sides, are joined, in the centre, by a neat

THE COACH MANUFACTORY OF MESSRS. ATKINSON AND PHILIPSON, NEWCASTLE-UPON-TYNE.

high level bridge, which greatly facilitates the communication between the different departments.

Provided the visitor has a taste for mechanics, he will probably find his way first to what is called the "WHEELERS' DEPARTMENT," which is on the east side of the works, and includes a saw-mill and other machinery for cutting the timber. The machinery itself is an object of no common interest, it being calculated, in this and other parts of the works, to equal the labour of fully fifty men. It is here applied with the greatest imaginable success.

The smiths' shops are also on the south side of the works, and are very extensive and well-arranged. Unlike most coach-makers, Messrs. Atkinson and Philipson manufacture every part of the iron-work required for their carriages, including patent axle-trees, springs, &c., on the premises. In this department are to be seen lathes on the most improved construction; drilling, screwing, punching, clipping, and other machines; large grindstones for polishing, with patterns and moulds innumerable for facilitating the work; and this, independent of the others, is a department of considerable importance. There are also furnaces for heating the spring-plates, for tempering and case-hardening axle-trees, &c. All the furnaces are driven by a fan-blast, which is ingeniously placed underground, to deaden the noise. The turning-lathes, which are exceedingly beautiful, are all driven by engine-power.

Continuing our inspection of the south building, we reach the upper story, in which is a Show-room 130 feet by 60, which usually contains from 50 to 80 finished carriages of every possible variety; and on the same floor, and communicating therewith, is a Painting Room of similar dimensions, passing through which we enter the Harness and Trimmers' Room, also a very large room, in which branches a large number of hands are employed. All these rooms are heated, in winter, by hot-water pipes, to a comfortable temperature.

The north side of the works is entirely appropriated to the building of carriages, the body and carriage departments being kept separate.

Of course, a very large stock of timber is requisite for such an establishment. The timber yards are outside the manufactory, in two separate situations, where the material is cut into planks and arranged in large tiers, all the various kinds being separated, such as mahogany, *oak, ash,* elm, &c., where, we understand, it has to remain, in some

cases, several years, before it is properly seasoned. It is then taken into the manufactory to the saw-mills, and cut up for the various purposes for which it is adapted.

We might particularize, did our limits permit, some other features of this extraordinary establishment; but the above outline will indicate the operations of the principal departments, and will also show, though imperfectly, its value and importance, locally and nationally.

In short, the entire establishment, whether as regards extent, completeness of machinery, or methodical arrangement, fully equals the deservedly great reputation it has acquired as a Coach and Harness Manufactory.

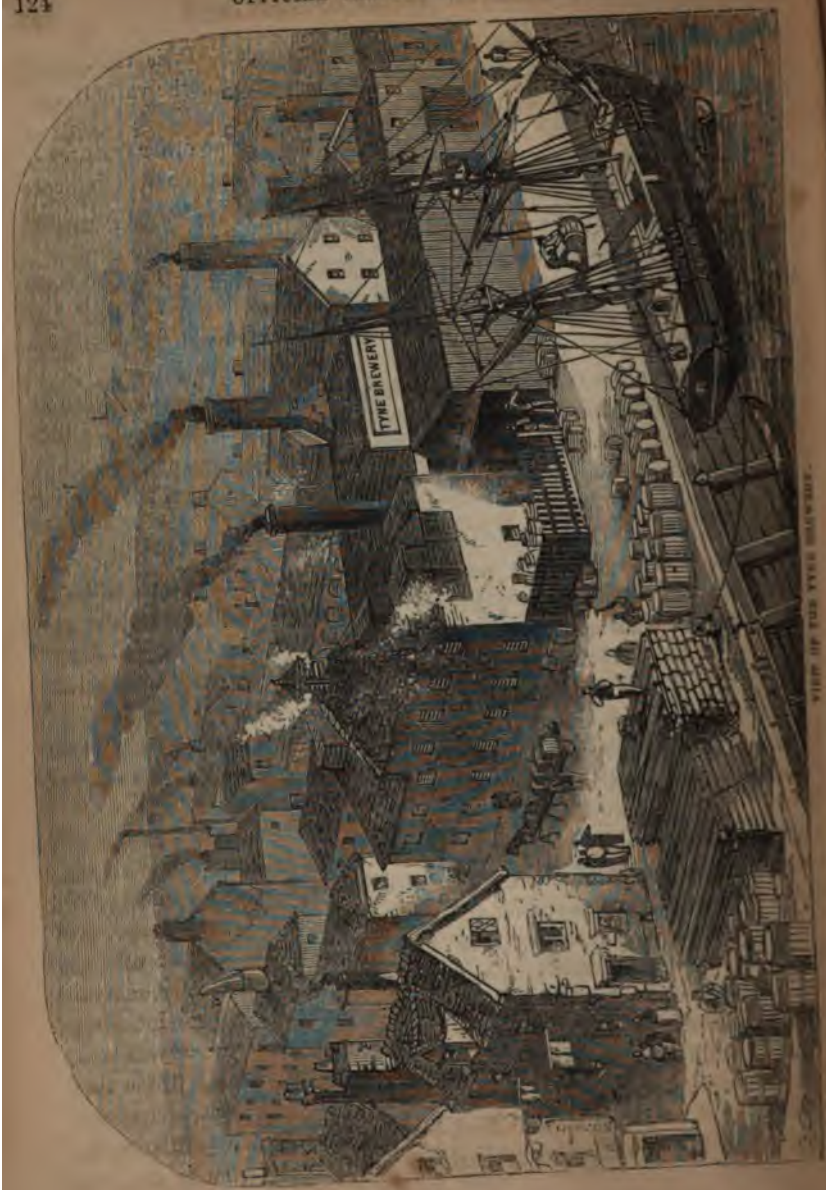
Thirsty travellers, and those who delight in the invigorating juice of the hop, will find that Newcastle is not deficient in the supply of good, sound, nutritious beer. Some idea of the enormous quantity of what we may term our national beverage, may be formed from the annual malt returns:—

"The total quantity of malt made in the United Kingdom in the year ending September 30, 1859, was 6,122,892 quarters, of which 659,882 quarters were for distillery purposes or for exportation, and therefore free of duty. The quantity charged was 5,463,010 quarters; and the quantity used by brewers, victuallers, and retailers was 4,866,402, leaving only 596,608 quarters for private consumption."

This subject introduces to our notice a Brewery, which may well be considered the representative of its class, not only in Newcastle, but in many towns elsewhere.

The Tyne Brewery Company

is a highly respectable business, established about a century and a half since, and is the property of a private Company. The premises are situated on the Quay, in the parish of All Saints. Under the efficient management of Mr. Laws, the reputation of this Brewery, already extended far and wide, has been much increased. All descriptions of Beer are made at this Brewery: Mild Ale, India Pale Ale, Strong Ale, Table Beer, and Porter; and we may add, that all these have admirers who stoutly advocate the excellency of their particular choice. The very best materials are employed in the manufacture of these beers; hops of the choicest quality are used, and (what is almost as



VIEW OF THE TYNE BRIDGE.

important) the greatest care is exercised in the brewing, without which a very inferior beverage would be produced. The proprietors of thi Brewery are Maltsters; they are also importers of Foreign spirits o all kinds.

We would remind our readers that, despite the water-drinker' warning, beer, in general, is nourishing, and has a tendency to fatte such individuals as are of dry and rigid fibres. It is the most usefu species of drink to the weak, the lean, and the laborious, and (taken i moderation), by stimulating the system, invigorates and promotes healthy frame of body. The most important object, however, is to ge beer in all its purity, and for this we must have recourse to respectabl brewers, who prefer the reputation of their good names to nefariou gains. In conclusion, we recommend the reader to visit the Tyn Brewery to test the excellency of its malt liquors for himself.

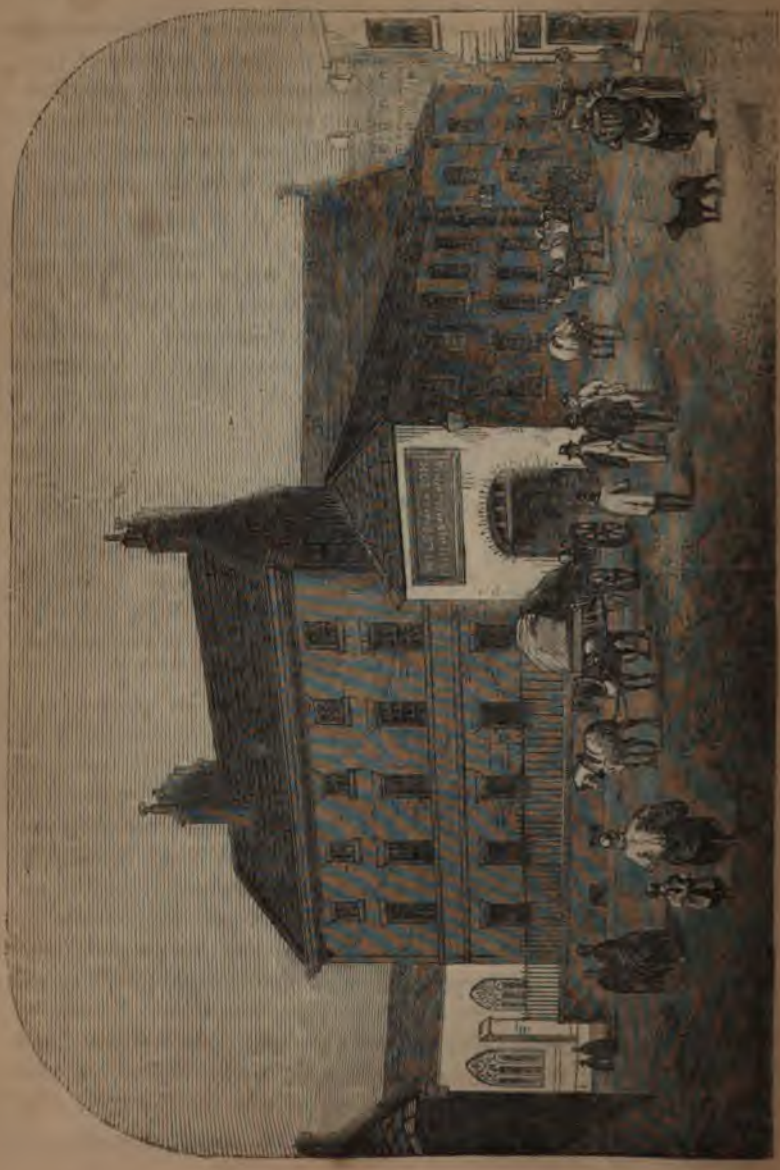
The Cheese and Bacon Stores of Messrs. R. Wilson and Son

The business to which our present notice refers was established i 1826, for the importation of Butter, Cheese, Hams, and Provision generally, from foreign countries, and the supply of these essenti articles of consumption in large quantities, and of the very bes quality.

The premises are entered from Bewick-street, and are close to th central station. They are very extensive, and adapted, in every respec to the purposes of this trade. The warehouse is sufficiently capaciou to receive many thousands of Hams and Casks of Butter. "Plenty might be inscribed as the motto of this establishment, for when w visited it, every inch of ground seemed covered with some delicacy o other, and as fast as one portion disappeared another stock replaced it.

The visitor should not fail to see the Cheese Stores, and he will, n doubt, marvel at the quantity collected together; but it must be remem bered that cheese is a staple production of our country, in which w excel all others.

The Drying Department was entirely hung with sides of Bacon an Hams, undergoing the important process of drying. The very be bacon is kept in stock, and, indeed, the provisions sold by Messrs. R Wilson and Son are of sterling quality. All the carts, vans, &c., e



ployed in the service of this firm, are loaded under cover, thus securing the provisions from injury.

Messrs. R. Wilson and Son have increased extensively their business operations, by a liberal and straightforward mode of management.

Messrs. John and James Samuel Harvey, Tobacco and Snuff Manufacturers, Hanover-Square.

"Tobacco," says Mr. Porter, "is perhaps an object of more general use than any other production of the vegetable kingdom; and if we consider that in no sense can it be classed among articles necessary for human subsistence, the fact is calculated to excite our surprise as well as interest. The love of tobacco is evidently an acquired taste; yet is one so easily and universally acquired, that this weed forms a luxury which is enjoyed in common by the African negro, the unclothed and houseless wanderer of Australia, the hardy American Indian, the slothful Asiatic, and every class of people throughout the more polished countries of Europe."

The botanical name for the tobacco plant is *Nicotiana*, given to it in honour of Jean Nicot, Lord of Villemain, who was ambassador from France to Portugal about the time when the plant was first brought to Europe. It is supposed that he introduced it first into France, as Sir Walter Raleigh did into England.

A portion of the premises now used as the manufactory of Messrs. John and James S. Harvey was formerly an Unitarian chapel, and the chief part is of recent construction. They are well adapted to the purposes for which they are now employed, being spacious, well ventilated, and affording ample space for the operations of machinery. The hands employed average about one hundred.

In briefly describing some of the operations connected with the manufacture of tobacco, we may remark that shag tobacco is the leaf cut up into shreds and filaments; roll, is the leaves spun into a sort of rope, which is afterwards made up into a roll and pressed; cigars, are the leaves folded into the proper shape; and snuff, is made sometimes from the stalks of the leaves, sometimes from the leaves alone, and sometimes from both mixed together and ground into powder after undergoing a process of fermentation.

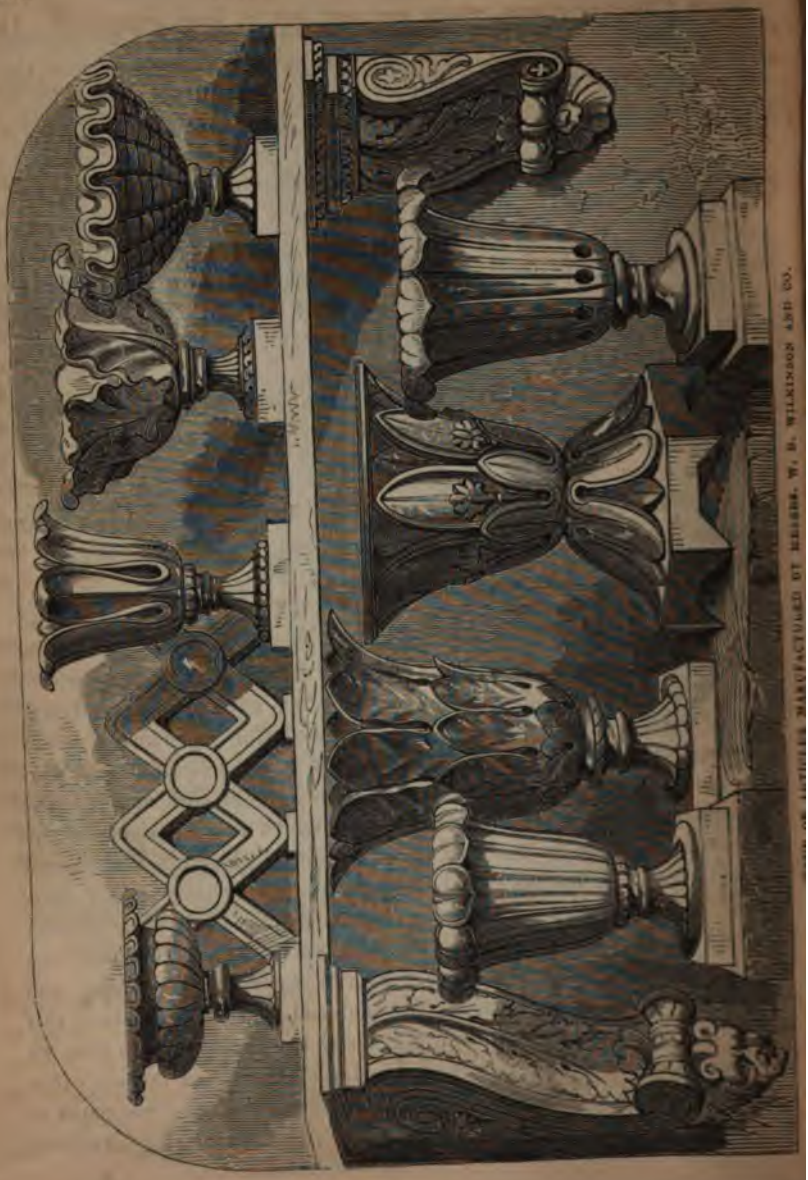
On opening a hogshead of tobacco, the leaves are found compressed almost into a solid mass. These are separated and sorted into the various descriptions for which they are required. For shag tobacco they are damped with water, and pressed into a cake and cut by a machine.

The visitors at the extensive establishment of Messrs. John and James Samuel Harvey will have an opportunity of seeing these various processes conducted on an extensive scale. The CUTTING ROOM is filled with elaborate machinery, drying-ovens, pressing machines, &c. The large engine, and, indeed, all the machines, including the tubular boiler, were made by Messrs. Hawthorn, and combine all the most recent improvements.

In every part of the manufactory we perceive how efficiently, either by the aid of machinery or by manual labour, the work is effected.

MESSRS. W. B. WILKINSON AND CO., PLASTERERS, ARTIFICIAL STONE, PLASTER OF PARIS, CEMENT, ETC., MANUFACTURERS.

The principal works of this firm are situated in Prudhoe-street, and their business is the largest of the kind in the Northern Counties. The works are entered through an archway floored with their improved Artificial Stone Flooring, bearing constantly the wear and tear of heavy wagons. An immense quantity of this description of flooring is now being executed by them, and we understand it is applicable to all purposes to which stone is applied, at less than half the cost, and to many purposes, such as covering arches, &c., to which stone cannot be applied. On our visit we were shown the stables, which are also floored with this material, and we found them uninjured by their heavy cart-horses, and quite impervious to the urine. Anticipating an increasing business in this department, they have erected a powerful crushing machine, manufactured by the noted firm of Sir W. G. Armstrong and Co., for the purpose of preparing the material, and we understand this is the only machine of the kind in the district. In addition to this, we observed other Mills for Grinding Plaster of Paris and various other substances, near which are calcining furnaces, and in various parts of the works we were shown the processes of manufacturing Artificial



Stone Chimney-pieces, which are sent out in large quantities. Also Vases, Pedestals, Fountains, &c.

The upper floors of the works we found occupied by men modelling and casting architectural enrichments, and giving the last finish to the Artificial Stone Chimney-pieces.

In the Show-room there are thousands of specimens of architectural enrichments in every style, and the facilities for doing an extensive business are very great, and will be much increased when the contemplated additions to their works are made.

Messrs. W. B. W. and Co. are obliged, for want of space, to occupy two other large Stores in other parts of the town. At one of them, near the river, the Lath-splitting Department is carried on. Here there are immense piles of lath-wood, and several men constantly employed; and the laths, when prepared for sale, find their way to the various country builders between the Tees and the Tweed. Large quantities of Portland and other cements are also kept at this store for exportation and local sale. At their other store, in Northumberland-street, large quantities of glazed drain-pipes of all sizes, from two inches up to two feet, are kept in stock and supplied to builders and others occupied in drainage works as required.

We should not omit to mention that Messrs. W. B. W. and Co. are applying the beautiful coloured tiles of Messrs. Minton and Co., in conjunction with their Artificial Stone, to the manufacture of Chimney-pieces, Baths, Sinks, &c., and that they also apply these tiles to flooring. It may interest some of our readers to know that it is necessary to coat the bottoms of iron ships inside with some material, to prevent the constant motion of the bilge-water and sand from wearing off the rivet-heads: this Messrs. W. B. W. and Co. accomplish with their Cement.

Messrs. W. H. Walker & Son, Stove, Grate, and Fender Manufactory and Iron Foundry, Percy Iron Works.

The Percy Iron Works are situated in Percy-street, in the parish of St. Andrew's. They were established in 1830, and have since, owing to the extraordinary development of the iron trade, increased in importance and rank among the most important of the manufactories in Newcastle.

THE PERCY IRON WORKS, THE PROPERTY OF MESSRS. W. H. WALKER AND SON.

Upwards of 70 workmen are constantly employed in the Percy Works, and the handsome Show-Rooms in Percy-street prove what can be done in iron-work at Newcastle. We annex a list of the principal articles that are produced at the Percy Works:—

Berlin Black, Bright, and Blacklead Register and Sham Stoves, including Stevens's, Sherringham's, Corbitt's, and other Patent Grates. Electro-Bronzed and Berlin Black Metal Chimney-Pieces.

Fenders, in Berlin Black, or Bright, and Electro and other Bronzes; Fire-Irons, &c.; Walker's Patent Self-Feeding Phœnix Stove; Radiating Hot-Air Stoves; Swaine's Patent Hot-Air Stoves, for heating Churches, Public Buildings, Hothouses, Entrance Halls, or any other description of Building; W. H. Walker and Son's Improved School Stove; Shop, Office, Yacht, Cabin, Ship, and Gas Stoves of every description; Improved Cooking Apparatus, fitted with Cast or Wrought Iron Back Boiler, from which Baths or Steamers may be supplied. Ovens, Hot Plate, &c. Cottage Kitchen Ranges, &c. Entrance Gates, Palisadoes, Balconies, Balconettes, Verandahs, Staircase Balusters, Tomb Railing, &c., in every Style and Design.

Churches, Public Buildings, Hothouses, Conservatories, &c., warmed by the circulation of hot water, upon the most improved principles, combined with economy and durability; Cast and Wrought Iron Safes, Safe-room Doors, &c.; Cast and Wrought Iron Bedsteads; W. H. Walker and Son's Improved Mangle; Spouts, Pipes, Air Grates, Stench Traps, Galvanized Iron Windguards, Revolving Chimney Cowls; Cast-iron Skylights, Windows, and every other article required in the Building Trade, always in Stock.

Stable Fittings, Hay Racks and Mangers; also, W. H. Walker and Son's Improved Manger and Hay Rack combined. Bells hung, and every description of Smith's Work executed by the most experienced Workmen, and Castings of the best Quality. A large and beautiful selection of Foreign and British Marble Chimney-Pieces, at very low prices.

We cannot quit Newcastle-upon-Tyne without a few words of recommendation to Messrs. Dodsworth, Booksellers. The visitor will find in this establishment an extensive variety of the best works in English literature, and all the principal works of local topography which he may

desire to consult, or to guide him in his journey through this most interesting portion of the country.

Newcastle is not without that necessary of life in these modern times, a daily newspaper. The *Northern Daily Express*, the property of Mr. W. C. Marshall, began its career when the enterprise was declared to be utopian, and success an impossibility. It started into existence in 1855, anticipating by some weeks the removal of the newspaper stamp. Ever since that time it has gone on steadily increasing in popularity and power; and though some rivals, allured by its success, have subsequently entered the field, the *Express* stands pre-eminent in size, circulation, advertising connexion, and most of the qualities which render a newspaper valuable in the family circle and the counting-house. Its influential position in the wide district of its circulation is generally acknowledged.

Should the visitor proceed on the LINE FROM NEWCASTLE TO CARLISLE, he will find much to gratify his antiquarian tastes and his love for natural scenery, for the whole of this iron route, in these respects, presents a constant succession of attractions. We do not describe this line, as it does not come within the province of our present Guide. Suffice it to say that on the *left* of the railway from Newcastle are *Bradley Hall*, a castellated mansion, the remains of *Prudhoe Castle*, *Hexham*, and its venerable church, and Priory Gate, *Allendale*, with its magnificent sylvan scenery, *Featherstonehaugh Castle*, *Blenkinsop Castle*, *Castle Carrock*, and *Corby Castle*. On the *right* of the railway from Newcastle are *Ryton*, and its picturesque scenery, *Wylam Hall*, *Halton Castle*, *Hexham Abbey*, *Swinburne Castle*, *Chipchase Castle*, with fine prospects. *Beaufront*, situated in a picturesque locality, *Haltwhistle*, with its ancient church and curious monuments, *Thurlwall Castle*, *Naworth Castle*. This latter building has a peculiar historical interest attached to it, as having been (according to tradition) the temporary residence of Mary, Queen of Scots, during her sojourn, or rather imprisonment at Carlisle.

The romantic fame of Naworth is, however, derived from Lord William Howard—"belted Will Howard," one of the heroes of Border *Minstrelsy*. He was the third son of the fourth Duke of Norfolk, and grandson of the famous Earl of Surrey. Belted Will, the terror of th

Moss-troopers, made Naworth Castle his permanent residence, after having been appointed King's Lieutenant and Warden of the Marches.

This Border Castle remains one of the least impaired and most interesting of the feudal dwellings of ancient England. It is nearly quadrangular in form, and of prodigious strength. The interior is extremely interesting. The Long Gallery, 116 feet in length, is filled with many curious antiquities. In the Dining Hall are two portraits

NAWORTH CASTLE.

of the lady of Lord William. The chapel retains much of its original condition. The apartments of the redoubtable warrior himself are, however, the most curious. In his bedchamber, represented on nex page, is the plain and simple bed on which Lord William slept. Above this room are the Library and the Oratory of the noble recluse.

The Library contains some curious MSS., with a large collection of rare books, many of them having the autograph of "belted Will." The ceiling is richly carved, the corbels and bosses being highly embellished with armorial devices; the skirting of the room is of oak, black from age. Lord William was, as he is styled by Camden, "a lover o

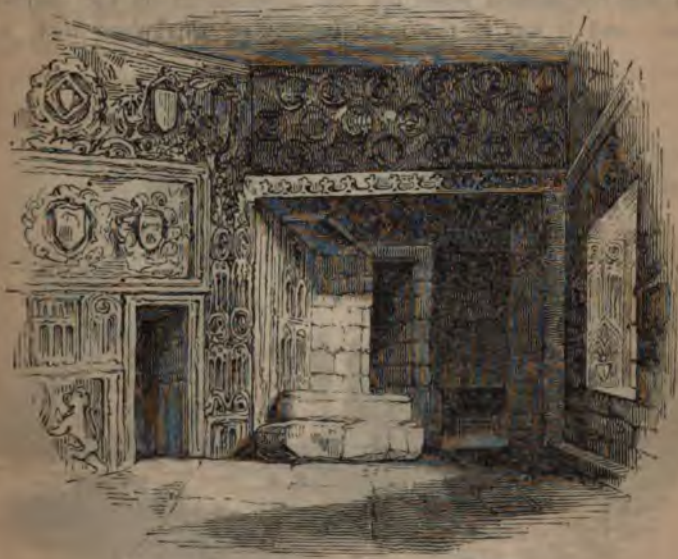
BEDCHAMBER AT NAWORTH CASTLE.

the venerable antiquities," and in this apartment much of his leisure time was spent.

LIBRARY AT NAWORTH CASTLE.

The other chamber, which tradition closely associates with the memory of this nobleman, is the Oratory. It is fitted up with plain wainscot, painted red, and ornamented with escalop-shells and crosslets—armorial devices of the Dacres and the Howards.

The Confessional is a small dark closet within the Oratory. The Dungeons of the Castle consist of "four dens under the great square tower, at the south-west angle." They "instil horror into the beholder."



THE ORATORY, NAWORTH CASTLE.

The Castle stands on a pleasant eminence at the head of the vale of Lanercost, or St. Mary's Holme, and not far from the beautiful and picturesque ruins of the Priory, which cover the dust of the ancient lords of Naworth, and many other gallant chieftains who formerly held sway over the wild Border. An engraving of this building is on the following page.

From Newcastle we pursue the

MAIN LINE

to BERWICK. One mile and three quarters from Newcastle we reach

HEATON STATION. Tradition asserts that Heaton was a place of retreat for King John when he came into this part of the country. There was anciently a chapel in this place in which Edward I. attended, (December 7th, 1299,) to hear a boy bishop perform the vespers of St. Nicholas.

Three miles from Heaton is BENTON STATION, and one mile beyond, KILLINGWORTH STATION. It was on a railway at Killingworth, in 1814, that Stephenson made his first experiments on the locomotive engine; and it was in the main colliery of this place that, while

LANERCOST PRIORY.

engineer of the works, he discovered the safety-lamp which bears his name. On Killingworth Moor, the Newcastle Races were held until 1790. One mile west is *Gosforth House*, and two miles further, *Woolsingham House*. DUDLEY AND CRAMLINGTON STATIONS succeed to Killingworth Station. *Cramlington*, nine miles and three quarters from Newcastle, is pleasantly situated on a rising ground, which commands a fine sea prospect. Four miles distant, near the coast, is *Seaton Delaval*, the residence of Lord Hastings. The mansion was

built after a plan by Sir John Vanbrugh, and is situated amidst extensive pleasure-grounds, commanding magnificent views.

Six miles distant is *Blythe*, at the mouth of a small river of the same name. This place derives its origin from the coal trade, which has increased considerably of late years. In the neighbourhood of Cramlington is *Blagdon Park*, the seat of the Ridleys.

Leaving Cramlington Station, and passing PLESSAY and NETHERTON STATIONS, we reach MORPETH STATION, sixteen miles and a half from Newcastle.

Morpeth is a pleasant, well-built town, seated on the northern banks of the river Wansbeck, in a sheltered vale, surrounded by a richly-cultivated country. It is a place of considerable antiquity; and, in 1215, was burnt by its own inhabitants, out of hatred to King John. The name is said to be derived from *More-path*, or the road through the Moor. The weekly market is said to be one of the largest in England. The Town Hall was erected by the Carlisle family in 1714. The Grammar School, an ancient building, was founded by King Edward VI. The parochial church stands on Kirk Hill, and near to it are the remains of the baronial castle, consisting only of an old gateway, tower, and part of the walls. This tower was the work of William, Lord Greystoke, who lived in the time of Edward III.

Two miles fromMorpeth, through one of the loveliest walks in the kingdom, are the ruins of *Mitford Castle*.

Newminster Abbey, now razed, was situated on the banks of the Wansbeck, half a mile from Morpeth. *Bothal*, the property of the Duke of Portland, is in the neighbourhood. Bothal Castle was built in the reign of Edward III. It was a place of great strength and beauty. The only remains now to be seen are portions of the gateway and walls. The site of these ruins occupies a fine natural eminence in the midst of a deep valley, and washed on the south by the Wansbeck. At a short distance, east from the castle, is the church, which contains a curious alabaster tomb in memory of the Ogles.

From Morpeth there is a

BRANCH LINE TO BLYTH, PERCY MAIN, NEWCASTLE, AND TYNEMOUTH. Pursuing our route from Morpeth to Berwick, after leaving the former station we pass LONGHIRST, WIDDRINGTON, and ACKLINGTON STATIONS, reaching WARKWORTH STATION, 31¼ miles from New-

castle. The great attractions here are the famous fortress and hermitage, one mile distant.

Warkworth Castle was probably erected by some red-handed Norman baron, soon after the subjugation of Northumbria by William the Conqueror in 1080. In the reign of Henry II. we find the castle and manor held of the monarch on the usual condition of feudal tenure, by one Roger Fitz-Roger, whose ancestor Serlo de Burgh was one of the adventurers who followed the Conqueror's banners into England, and may, therefore, have been rewarded for his service with the lands of Warkworth.

WARKWORTH CASTLE, NORTHUMBERLAND.

At a much later epoch the castle became a favourite residence of the noble Percys, who, in Leland's time, "well menteyned it," repairing its ancient walls.

About 1672, however, they resorted to Alnwick Castle as their principal seat, and Warkworth was unroofed, the lead and timber being granted to one of their agents. For many years the progress of decay was rapid, and the ivy clambered up the old grey tower.

The ruins, within the moat, occupy an area of about five acres. The *Keep and* many of the principal apartments are still in excellent preser-

vation, and exhibit many interesting features of the feudal stronghold. The Keep is an octagon in shape, crowned by a lofty tower, from whose summit a splendid panorama of hill and dale, and glen and river, and the seething waters of the Northern Ocean may readily be obtained.

The walls are protected by towers, whose masonry is in good repair, though the roof and windows are dismantled. The Baronial Hall is a magnificent chamber, nearly 40 feet in length, 24 in width, and 20 feet in height; and there is an additional state-room almost equal to it in size. Within the entrance, upon the ground-floor, are eight apartments with vaulted roofs of stone, which, it is supposed, were designed for the cattle brought into the castle when an inroad of the Scotch was apprehended. In a word, there are few strongholds in the north of England which equal Warkworth in grandeur and solidity.

About half a mile from the Castle, on the summit of the steep ascent, whose base is washed by the waters of the river Coquet, stands the ancient Hermitage, celebrated in the famous ballad, "The Hermit of Warkworth," by Bishop Percy. When, or by whom it was founded, we have been unable to discover. The *last* hermit was appointed by one of the Earls of Northumberland, in 1532, who speaks of it as "mine armitage, belded in a rock of stone in my parke, in honour of the Holy Trinity." The chapel belonging to it is still in admirable repair. It is hewn out of the solid rock, 8 feet in height, 18 in length, and 7 in width, with noble columns, groins, and windows, Gothic in character, and communicates with a sacristy, and a vestibule, of suitable proportions. The window is fashioned into two compartments. On the cill lies a well-sculptured figure of a lady, and at her feet a male figure kneels. In the pillar there seems to have been another figure, and the whole sculpture undoubtedly illustrates the incident—the murder of his brother by one of the Bertram family—described by Bishop Percy in the well-known ballad to which we have already alluded. A staircase led from the Hermitage up to the bloomy garden on the summit of the bank, where—

> "The woful man, low sitting on the ground,
> Musing full sadly in his sullen mind,"

might survey the glorious picture drawn by the plastic hand of Nature, —valleys, and towering hills, and swarthy rocks, a winding river, and a measureless sea.

At Bilton Station, which succeeds Warkworth Station, there is a Branch Line to Alnwick, three miles in length. The town is situated on the irregular declivity of an eminence arising from the river Alne, over which, at the north extremity of the town, is a neat stone bridge of three arches; the streets are spacious, and the majority of the houses are well built. Bondgate, one of the streets, takes its name from a gate erected by Hotspur, and still standing. The town possesses a Town Hall and Clock House, a Free School, and several Churches and Chapels.

The most interesting object is *Alnwick Castle*, which has been recently restored, at a great expense, by the noble proprietor. This magnificent building, the outer walls of which enclose an area of five acres, stands on an eminence on the south bank of the river Alne, which in its circuitous course washes the beautiful lawns that surround the Castle. It is believed that Alnwick Castle was founded by the Romans, the foundations of the buildings, with Roman mouldings, having been discovered when a part of the Keep was taken down for repair. There are also marks of Saxon architecture. This noble mansion belonged to William Tyson, a Saxon baron, who was slain at the Battle of Hastings, and it came into the possession of the Percy family in 1310.

The inner court of the Castle is entered by a gateway of great antiquity, flanked by two octagonal towers, ornamented with armorial escutcheons. From the inner court, in the centre of the citadel, is a staircase of singular form, expanding like a fan; the roof enriched with a series of 120 shields, with the quarterings and alliances of the Percy family. The apartments are magnificent, both as to proportion and decoration. The Castle underwent a memorable siege, in 1093, by Malcolm III. of Scotland, who, with his eldest son, Prince Edward, was slain before its walls. This event was commemorated by a cross erected on the spot where the king fell, which was restored in 1771. In 1174 William III., King of Scotland, was taken prisoner here during a siege, which is also commemorated by a monument, with this inscription: "William the Lion, King of Scotland, besieging Alnwick Castle, was here taken prisoner, 1174."

The grounds at Alnwick Castle are very beautiful and extensive, containing the remains of two ancient Abbeys—*Alnwick* and *Hulne*.

Of the former building a gateway tower remains, on which are armorial shields of the Percys.

The outer walls and gateways of Hulne Abbey are still standing, but the chapels, oratories, and offices are greatly dilapidated. The most perfect portion is a tower, which was fitted up, in the last century, in the Gothic style.

Four miles from this spot is *Eglingham Park* and *Roddam Hall.* Three miles west of Alnwick, *Lemington Hall;* one mile further, *Broome Hall;* two miles beyond, *Callaby Castle,* formerly the seat of the Callaby family. The tower at the west end of this mansion has marks of great antiquity; those in the east and centre of the building are modern.

Near Callaby is a conical hill, called Castle Hill; its top, comprising about two acres, is girt by a high wall, and there are other ancient fortifications.

By the side of the highway, over *Hedgley Moor,* is a square stone pillar, called *Percy Cross,* embossed with the arms of Percy and Lacy, and set up in memory of Sir Ralph Percy, who was slain here by Lord Montacute, in 1463. Returning to Bilton Junction Station, we will pursue our railway journey. LONGHOUGHTON is the next station, three miles from Bilton. There are lead and coal mines in this district. One mile distant is *Howick Castle,* the seat of Earl Grey. The former ancient building was taken down in 1787, to make way for the present noble mansion. It stands within a mile of the sea. Near to Howick Castle is *Craster Tower.* One mile distant is *Renington,* which possesses an ancient church. Near this is *Rock Castle.*

Leaving Longhoughton Station, we reach, five miles and a quarter distant, CHRISTON BANK STATION, near which are *Charlton Hall* and *Falloden House,* the seat of the Right Hon. Sir George Grey, Bart.

Three miles distant, on the coast, are the ruins of *Dunstanborough Castle.* This fortress formerly belonged to Edmund, Earl of Lancaster, a younger son of Henry III. It stands on an eminence of several acres, sloping gently to the sea, and edged to the north and north-west with precipices, in the form of a crescent, by the western termination of which are three natural stone pyramids of a considerable height, and by the eastern one an opening in the rocks made by the sea, under a frightful precipice, called Rumble Churn, from the breaking of the

waves in tempestuous weather and high seas. Above this is the main entrance, and by it the ruins of the chapel: at the south-west corner is the draw-well, partly filled up. It is built with whin and rag stone. In the additions to Camden it is recorded, that in one year there grew within the walls of this castle 240 Winchester bushels of corn, besides several loads of hay. It is likewise there mentioned, that a kind of spar is found hereabouts, called Dunstanburgh Diamonds, said to rival those of St. Vincent's Rocks, near Bristol.

Leaving Christon Bank Station, we pass CHATHILL, NEWHAM, and LUCKER STATIONS, and arrive at Belford.

Belford is a market town and parish in the counties of Northumberland and Durham. The town, which is within two miles of the sea, is beautifully situated. The church is a handsome structure, and was erected in 1700. Near the town, on a rising ground, are the ruins of an ancient chapel, surrounded by several tall oaks, which give it a romantic appearance; and at a little distance are the remains of a Danish camp.

HOLY ISLAND, DURHAM.

One mile north-west of Belford is *Middleton Hall*. A little to the north-east of Belford is Lindisfarne, or Holy Island, a small spot of

ground encompassed by the sea. In ancient times it was famous for its monastery, as, also, for being the retreat of St. Cuthbert, where he indulged himself in a recluse life. Though situated in Northumberland, and only ten miles from Berwick-on-Tweed, it is a parish in Highlandshire, county of Durham.

With respect to the monastery of Lindisfarne, great part of the ruins are still to be seen; among these, in particular, are the arches, which are circular, and the columns, very massy. On the north and south walls the arches are pointed, which prove that part of it, at least, was built since the reign of Henry II. Various fragments of the offices, built with reddish stone, are still standing, and foundations of buildings are scattered over a close; but its chief ruins are the Church, whose main walls on the north and south sides are standing, though much out of the perpendicular. The west end is likewise pretty entire, but the east is almost level with the ground. The length of the building is about 138 feet; the breadth of the body about 18 feet; and that of the two side aisles about nine feet each. The tower stands in the centre, and was supported by two large arches crossing diagonally. At a small distance to the west stands the present parish church, which is a small but very neat structure, and seems to have been built out of the ruins of the monastery.

About two miles to the east of Belford, on the coast, is *Bamborough*, which, though now only an inconsiderable village, was once a royal burgh, and sent two members to Parliament. It even gave name to a large tract extending southward, which was called Bamboroughshire. It had also three religious foundations. Its very ancient castle stands on the crown of an almost perpendicular rock, of a triangular shape, one of the points projecting into the sea, and being nearly 150 feet above the level of low-water mark. Many of the most ancient fortifications on the land side are broken and defaced by the falling of the cliffs on the brink of which they were erected. The approach to the castle is by a gateway on the south-east side, being the only accessible part of the rock. It was defended by a deep ditch, and the gateway was strengthened by a round tower on each side, from whence, about twelve paces, there appears to have been a covered way leading to a second gate of a more modern order of building, and which has had a portcullis; this part, which is Saxon, is said to have been the

castle or palace of the kings of Northumberland, built by King Ida, who began his reign in the year 559. The keep, or main tower, which stands on the highest part of the rock, is a lofty square structure, of the same model with many Norman fortresses, founded in or near the time of the Conqueror. The stones with which it is built are (some lintels excepted) remarkably small, and were taken from a quarry at Sunderland Sea, three miles distant. The walls to the front are eleven feet thick; but the other three sides are only nine.

In the reign of Queen Elizabeth, Sir John Forster, of Bamborough Abbey, was appointed governor of this castle after the battle of Musselburgh; his grandson, John Forster, afterwards had a grant of it and the manor, whose descendant, Thomas Forster of Ethelstone, engaging in the rebellion of 1715, his estates were confiscated, but afterwards purchased by his uncle Lord Crew, Bishop of Durham, and by him bequeathed in trust for charitable uses. The ruins are still considerable; but in the year 1757 the Trustees for Lord Crew's Charity began the repairs of the keep or great tower.

Archdeacon Sharp, about the year 1757, expended large sums of money in repairing the castle and rendering it habitable.

The whole of the extensive accommodations of the castle (except the library and the residence of the trustees) are devoted to objects of active benevolence. Amongst other excellent arrangements, life-boats and all kinds of implements for saving crews and vessels in distress are always in readiness, and apartments are fitted up for shipwrecked sailors. The great tower of the castle commands extensive sea and land prospects. Opposite to Bamborough are the *Farn Islands*, the name of which is, no doubt, familiar to our readers as the place of Grace Darling's deeds of mercy.

The line of railway from Belford is continued from hence near the sea-shore.

After passing Beal and Scremerston Stations, we reach Tweedmouth Station.

Tweedmouth is a handsome suburb to Berwick, and is joined to it by a stone bridge. From hence there is a Branch Line to Kelso twenty-three miles and a quarter in length, by Velvet Hall, Norham, Cornhill (for Coldstream), Wark, Carham and Sprouston. At *Norham*, eight miles from Tweedmouth by this railway, is the ancient

Castle of the same name, represented in the accompanying engraving. The Castle stood on a high rock on the brink of the Tweed in 1121, but in 1138 the Scots, under King David, destroyed it. It was soon afterwards rebuilt, particularly the great tower, which is still standing. In 1216, Alexander II., after investing it forty days with a strong army, was obliged to raise the siege.

NORHAM CASTLE, NEAR BERWICK-UPON-TWEED.

One mile and a quarter from Tweedmouth station brings us to BERWICK-UPON-TWEED, the terminating point of the NORTH-EASTERN RAILWAY. The town of Berwick is believed to have originated in a settlement of the Danes, in 867. Early in the twelfth century it was known as the capital of Lothian, in the kingdom of Scotland, under Alexander I. It soon afterwards grew populous and wealthy, became the chief sea-port of Scotland, was created one of the four royal burghs of the kingdom, and, aided by an immigration of enterprising Flemings, so increased in commercial importance and grandeur as to have been described as "a second Alexandria." Of course, such a city, placed upon the frontier of two rival and warlike nations, was sure to be the first to suffer in any encounter between them; and hence arose the necessity for those immense fortifications which yet surround it. The

history of Berwick is exceedingly interesting. No other place in the now United Kingdom has been the scene of so many battles, sieges, escalades, and massacres. Even in comparatively recent times, nearly all the English sovereigns, from John to Elizabeth, figure in its historical picture, either as invaders or visitors; while the contemporary Scottish monarchs, with all their array of Douglases and Setons, Howes and Murrays, Bruce, Baliol, and Wallace, and nearly every noble name of Scotland, are seen grasping the hands of their southern neighbours over a hollow truce, or confronting them in deadly conflict.* The present walls with their gates, dating from the time of Elizabeth, are nearly entire, and form a delightful promenade, nearly encircling the city, the circumference of which, exclusive of the suburbs, is 1¾ miles. Towards the river the line of the works is nearly straight, but on the north and east the continuity of the line is broken by five bastions. The one close by the Scotch Gate is called Meg's Mount; from which, going eastward, we reach successively Cumberland Bastion and Brass Mount on the north, Windmill Mount looking east, and King's Mount on the south. Then follow Fisher's Fort, the Four-gun Battery, and the Saluting Battery overlooking the river. Some remains of a still more ancient wall, which enclosed the present suburbs of Castlegate and the Greenses, extend eastward.

The modern town is well built, containing many fine edifices, both public and private. The first peculiarity that strikes a stranger is the Scotch Gate, a strong archway giving access to the High Street, which is terminated and somewhat inconveniently narrowed by the Town Hall at its lower end. A new and handsome set of Court-houses with a Prison have been since erected in Wallace Green on the east of the town, and close by these there is a chapel for the United Presbyterian congregation under the pastoral charge of the Rev. Dr. Cairns. Towards the sea are the Episcopalian Church, the Barracks, and the Governor's House. The town likewise possesses a large subscription library, an endowed free grammar school, and a charity school, the benefits of which are confined to burgesses and inhabitants. There is also an Infirmary; and at the Sandgate a very handsome structure has

* For many of the particulars respecting Berwick, and the places of note on the North *British* Railway, we are indebted to the "Handbook" descriptive of that line, published by Messrs. R. Hardie and Co., of Edinburgh. This should be purchased by all travellers.

been built, intended to serve the triple purpose of a Corn Exchange, a concert-hall, and an assembly-room. This building is in the Italian style, with a campanile, and cost about £5,000. In the Castlegate a very neat Episcopal chapel, in the Pointed Gothic style, tends to relieve the tameness of the northern portion of the suburbs. There is no lack of inns and hotels. The trade of the town consists chiefly of the export of salmon, corn, and coal, and a small importation of Baltic produce. Except an iron foundry, it has hardly any manufactures.

We will now invite our readers to accompany us on

THE NORTH BRITISH RAILWAY,

FROM BERWICK-ON-TWEED TO EDINBURGH.

The North British Railway Company was incorporated 19th July, 1844, for a line from Edinburgh to Berwick (junction with York, Newcastle, and Berwick), with a branch to Haddington (62 miles). In 1845 powers were given to purchase the Edinburgh and Dalkeith (14 miles), and to construct a small branch (2 miles) to connect it. The powers of the Edinburgh and Hawick (43½ miles) were transferred to this Company in the same year. In 1846 the Company obtained power to construct branches to Selkirk, Jedburgh, Kelso, Tranent, Cockenzie, North Berwick, and Dunse (42 miles), &c. Several of these schemes have since been made by local parties. A deviation and short extension were authorized in 1847.

By 21 and 22 Vic., cap. 109 (23rd July, 1858), the acts of the Company were consolidated, and an alteration sanctioned in Leith branch, so as to permit use of locomotives.

JEDBURGH.—Incorporated by 18 Vic., cap. 30 (May 25, 1855), to construct a line (7 miles, 1 furlong, 8 chains) from Jedburgh to the Roxburgh station of North British. Capital, £35,000, in £10 shares, with power to borrow £11,500. Opened 17th July, 1856.

By 23 and 24 Vic., cap. 140 (3rd July, 1860), the line is leased to the North British at 4 per cent., with increase above that amount equal to dividend paid on ordinary stock.

SELKIRK AND GALASHIELS.—Incorporated by 17 and 18 Vic., cap. 199 (July 31st, 1854), for a line between these towns. Capital, £24,000, in £10 shares; loans, £8,000. The line (6¼ miles) com-

mences on the "town haugh," near Selkirk, and terminates by a junction with the Hawick branch of the North British, near Galashiels station. Opened 5th April, 1856. At a meeting on 18th October, 1859, the Company was formally wound up, the balance in hand being divided, and the undertaking handed over to the North British.

Border Union.—By 22 and 23 Vic., cap. 24 (21st July, 1859), the Company is authorized to construct a line from Hawick to Carlisle, with branches as under:—Main line, 44 miles; Langholm, 7 miles; Canobie, ¼ mile; Gretna, 3 miles; total, 54¼ miles. The cost is estimated as follows:—Main line, £399,813; Langholm Branch, £49,935; Canobie, £1,557; Gretna, £1,220; making in all £463,577. The main line will be double from Hawick to Riccarton, 13¼ miles; single from Riccarton to Langholm Junction, 18 miles; and double thence to Carlisle, 13 miles. The branches are all single, but the single portion of the main line will be so constructed that at a future time it can be doubled throughout. Extra land, 20 acres; compulsory purchase, 3 years; completion of works, 5 years. The works are in operation, and the line is promised to be opened in September, 1861.

Border Counties.—Incorporated by 17 and 18 Vic., cap. 212 (July, 1854), for a line from Hexham, on the Newcastle and Carlisle, by the Valley of North Tyne, to Wark, Redesmouth, Harcshaw Iron Works, Billingham, Falstone, and Keilder. Length, 26 miles. By 22 and 23 Vic., cap. 43 (1st August, 1859), the Company were authorized to construct the Liddlesdale section to deviate some parts of the North Tyne section. The Liddlesdale section, 14 miles 7 furlongs and 15 yards, commences by a junction with the Border Counties, and terminates on the Border Union (Hawick to Carlisle) at Castleton; the Countess Park deviation (4 miles) commences by a junction with the Border Counties, at Chollerton, and terminates in Bellingham; the Hawkhope deviation (1 mile, 4 furlongs, and 66 yards) commences and terminates by a junction with the Border Counties. Extra land, 20 acres; compulsory purchase, 3 years; completion of works, Liddlesdale section, 5 years; Countess Park deviation, 1 year; Hawkhope deviation, 2 years; North Tyne section, 2 years. Works in progress. A provisional agreement was entered into in 1859 for amalgamation with this Company, on completion of the original line from Hexham to Bellingham, or at such early period as may seem preferable. On com-

pletion of the Border Counties (40 miles of single line from Hexham to Riccarton), the capital expended will amount to £291,000.

The station of the North British Railway at Berwick, a castellated building, and well situated, occupies the site of the old castle, of which a very few, but yet majestic, fragments may be seen on the west of the station.

Berwick Castle was built in the eleventh or twelfth century, and continued a place of strength during a space of 500 years. Like all other border fortresses, it has witnessed many an obstinate struggle between the Scotch and English. Its remains, when purchased by the Railway Company, were still very extensive.

Beyond the station, the York, Newcastle, and Berwick Line commences upon the grand Viaduct over the Tweed. The cost of this great work was £200,000, and it is the largest and grandest-looking bridge in the kingdom, or perhaps in the world. Some few may be longer, one or two higher, and others more massive, but none combine so nobly these three elements of magnificence—height, length, and solidity. It contains an almost incredible quantity of material, there being worked up in its construction no less than two millions and a half of bricks, and one million and a quarter cubic feet of masonry; yet this immense mass was fashioned into the splendid structure now before us in less than three years, having been begun in May, 1847, completed in March, 1850, and formally opened by Her Majesty and Prince Albert in August of the same year. It consists of 28 circular brick arches faced with stone, each 61½ feet span, resting on stone piers 8½ feet broad at the top. Its entire length is 2,160 feet, its width 26 feet, and its greatest height from the river bed 126 feet, of which 23 feet are below high-water mark. The half which spans the river is straight, having a rise towards Berwick of 1 foot in 200; the other half curves gracefully on a half-mile radius. At the south end an embankment five-eighths of a mile in length, and in some places sixty feet high, with a five-arch bridge crossing the road to Coldstream, &c., completes the junction of the Berwick and Tweedmouth stations, being a total distance of one mile. This embankment contains upwards of 700,000 cubic yards of earthwork, and in the various departments of the contract 2,000 men were employed at one time.

The prospect from the Berwick end of the viaduct is magnificent

On the right, the broad flood of the Tweed comes rippling down between its wooded banks from its far-distant source in the wilds of Lanarkshire. In the same direction are seen the dark pile of Hume Castle and the three grey peaks of the Eildons. Close at hand is Halidon Hill, where in 1333, Edward the Third's archers defeated the Scottish patriots who opposed his usurping vassal Baliol. On the south-west the Cheviot Hills rise dim and blue in the distance, bearing on their slopes the battle-fields of Flodden, Homildon, and Chevy Chase. Across the river lies the village of Tweedmouth, skirted by the Newcastle Railway and connected with Berwick by a long narrow bridge, about a quarter of a mile down the stream. Lower down is the port of Berwick with its surf-whitened bar, and the little sea-bathing village of Spittal opposite; farther off are the heights of Scremerston; in the extreme distance the looming mass of Bamborough Castle, and the Fern islands hovering upon the sea like distant clouds in a calm sky.

Five miles above Berwick the Tweed is crossed by the Union Chain Bridge, erected in 1820. It was the first suspension-bridge erected in Great Britain for the passage of carriages, and is 18 feet wide, 368 feet long, and its weight is 800 tons. From Berwick to this bridge there is a very delightful walk, in great part along the banks of the river, affording many fine views of most exquisite sylvan scenery.

The railway from Berwick runs parallel with the coast, and in some places close to the very verge of the cliffs, until it reaches BURNMOUTH STATION, 5½ miles from Berwick, and 52 miles from Edinburgh.

Within two miles and a half of Burnmouth is *Lamerton Toll House*, near the boundary between England and Scotland, famous for the celebration of runaway matches. Near the toll-bar are the ruins of Lamerton Kirk, the place where the marriage of James IV. to the Princess Margaret of England was solemnized in 1503; an event which, exactly one century later, united the crowns of the two kingdoms. Of the edifice itself only a few feet of the walls remain. The remains of a Danish camp, and the Castle of *Edrington*, are in this neighbourhood.

Leaving Burnmouth, the train passes *Fairneyside*, whence we obtain the first view of the beautiful vale of the Eye. *Highlaws* is seen next, and *Nether Byers*, the seat of Sir Samuel Brown, the inventor of the *chain*-cable and suspension-bridges.

Millburn House and paper-mill, with the old manor-house of Lint hill, come in view, and passing *Flemington* village, we reach, 1¾ mile from Burnmouth,

Ayton Station. From this point we have an excellent view of th lower basin of the Eye, with its well-cultivated slopes, and pleasant looking farm-steads. Two miles and a half to the left is seen *Halido Hill;* two miles farther *Coldingham* may be descried lying snugl in its hollow, and three miles beyond it is *St. Abb's Head.* Close upo the right are seen the farm-house of *Cocklaw* and *Chesterdale;* on th left, across the Eye, half a mile off, is the thriving village of *Ayto* (Eye-toun), not far from which stands the princely-looking mansion house of *Ayton Castle* (the property of William Mitchell Innes, Esq.) finely embosomed in wood, and worthily occupying the site of th ancient baronial castle of that name. The church stands nearly opposite on the river bank; it is built on the foundations of part of an ol monastic edifice, originally a branch of the Coldingham establishment The trading and fishing village of *Eyemouth*, with its well-sheltere harbour, lies at the river mouth, about three miles distant. This is th only seaport in Berwickshire, and is a place of considerable antiquity having been noted for its shipping so early as the reign of Alexande II. On a promontory a little northward stand the ruins of Eyemouth Fort, which seems to have been an object of peculiar jealousy to th English during the wars of the 16th century.

Four miles from Ayton we arrive at Reston Station (46½ mile from Edinburgh), where the Dunse Branch strikes off. *Duns* lies upon a beautiful plain to the south of the famous hill called *Duns Law.* The town contains some handsome streets and neat publi buildings. The Town House is a handsome modern building, sur mounted by a tower. Dunse Castle, a fine modern mansion, is erecte partly on the remains of a former castle. Dunse Law still retains upo its broomy top marks of the encampment which the Covenanting arm placed there in 1639. *Wedderburn House*, situated a few miles south east of Dunse, is worthy of being visited.

Reston Station is at the west end of the village of Reston, and abou 3½ miles south-west of Coldingham. The latter village is a place o very great antiquity, being indicated in Ptolemy's map of Britain unde the Romans. Near it stands the ancient Priory, founded in 1098 V

King Edgar of Scotland, and endowed by him and his successors with large estates in the neighbourhood. It was dismantled by Cromwell in 1660. In 1855 the exterior and interior of the ancient church were restored.

The train on leaving Reston Station passes through a deep cutting, and, at *Coveyheugh*, crosses the Eye Water, by a bridge forty or fifty feet high. Farther on we pass *Houndwood House*, once a hunting seat of the Scottish kings, and *Houndwood Inn*, Church, and manse. We next see *Renton* and its ruined tower, and reach, five miles from Reston Station, GRANT'S HOUSE STATION (41½ miles from Edinburgh). Between Grant's House and COCKBURNSPATH STATIONS the train enters the *Penmanshiel Tunnel*, by which the line is carried under the Lammermoor range. This tunnel, from the looseness of the slaty rock through which it is bored, was one of the most difficult works on the line. It is 260 yards long.

SKETCH NEAR DUNGLASS.

The train proceeds soon afterwards by the *Pease Burn*, whence a glimpse may be had of the celebrated Pease Bridge. This most remarkable bridge was built in 1686. It has four arches, and although only 18 feet wide, its length is 300 feet, and its height from the river-bed is 123 feet. The Pease, or Peath Dean, which it spans, is one of the most romantic of its kind; the descent on either side to the ford having been by sloping paths,—hence the name paths or peaths. About

half a mile from Cockburnspath Station is a small boat harbour called the Cove, whose romantic scenery well deserves a visit. Boats to visit *Fast Castle* and *St. Abb's Head* may be procured here.

Leaving Cockburnspath Station, the next object of interest on the line is *Dunglass*, a mansion-house, situated on the site of an ancient castle belonging to the Earls of Home. East of the house are the ruins of Dunglass Church, a fine Gothic building, kept in preservation by Sir John Hall, Bart., the proprietor. Farther on the line we cross the viaduct over Dunglass Dean. This work is one of the finest of the kind in Scotland, and was designed by Mr. Miller, the engineer of the line. It consists of six stone arches, the largest having a span of 135 feet with a rise of 45 feet from the springing of the arch, the height of the key-stone above the river-bed being 124 feet. Looking up the water from the viaduct, we obtain a view of the romantic water-course of the Dean, spanned by the beautiful arch made for the new public road. Down the water is seen the bridge over the old post-road, below which the sea opens out beyond the green headlands between which the stream debouches. On the north-west the tower of Dunbar Church, the Bass, and North Berwick Law, are prominent in the distance, and far out at sea gleams the Isle of May.

We now arrive at INNERWICK STATION, 2¾ miles from Cockburnspath. *Innerwick Castle*, and *Thornton Tower*, are ruins in this neighbourhood. Four miles and a quarter from hence brings us to DUNBAR STATION, nearly midway between Berwick and Edinburgh.

The ancient royal burgh and sea-port of Dunbar occupies a kind of promontory which looks out into the German Ocean, and is backed by a country generally level and fertile. It possesses two harbours, has a small foreign trade, and is the principal rendezvous for the herring fishery on this part of the coast. The tower of the handsome Gothic church of the burgh is 117 feet high, and was erected in 1820. The church contains an elegant monument in white marble to the memory of George Home, Earl of Dunbar, a favourite councillor of James VI. and I. Dunbar seems to have owed its rise chiefly to its ancient *Castle*, so celebrated in Scottish history. It was here that King Edward II. took refuge, on his retreat from Bannockburn, and he afterwards embarked from hence for England in a fishing-boat.

Dunbar Castle is situated about two hundred yards west from the town.

Its ruins rise like pillars from the tops of the rocks; and such is the antiquity, and such the decay of the buildings, that it is scarcely possible to distinguish the ruin from the rock—art in this case having almost relapsed into its primitive nature. Both are alike rugged and alike sublime; and when the sea wreaths the whole in foam, and the cloud stoops upon the shore, the whole elements seem to be here mingled and confounded in one grand chaos. The fortifications connected with the castle extended at one time over nearly the whole of the adjacent park, where some mounds yet remain to attest a fact which otherwise would have with difficulty obtained belief.

The ground near the Dunbar Station has been, on two occasions, the scene of sanguinary conflict—in 1296 and in 1650. The first battle took place during a siege of the castle by the English, under Earl de Warenne, when the Scotch army coming to its relief was defeated. The second conflict was one in which Cromwell was the victor.

Proceeding from Dunbar Station, the train passes through the Red Friars' Croft, and crosses the Biel, where we have a view of the watering-place and bay of *Belhaven;* the *Bass Rock* forming a very prominent object in the seaward prospect from this part of the line. Passing *Tynefield* and *Gateside*, we cross two roads and the Tyne, over a series of viaducts, and reach LINTON STATION, five miles and a half from Dunbar. About one mile from the station is *Hailes Castle*, formerly the seat of the Hepburns, Earls of Bothwell. It is said that Queen Mary and the Earl of Bothwell here spent a short period of their matrimonial life. The ruin overlooks the Tyne. In this neighbourhood is *Phantassie*, the birthplace, in 1761, of the late Mr. John Rennie, the eminent engineer. The genius which afterwards raised such durable monuments of itself in the bridges, piers, and harbours of England, was first nursed in the shop of the ingenious Andrew Meikle, millwright, the inventor of the threshing machine, who lived for many years and died in the parish of Prestonkirk; and two corn-mills are yet pointed out in this secluded district as the first practical essays of Rennie's mechanical talents.

Two miles and a half from Linton Station is EAST FORTUNE STATION, and three miles and a quarter beyond, DREM JUNCTION STATION, where there is a BRANCH LINE TO DIRLETON AND NORTH BERWICK.

Journeying from Drem Station, we pass the mansion-house and

village of *Ballencrieff*, and enjoy the magnificent prospects that are occasionally obtained over the remarkably fertile and picturesque country through which we travel, embracing *Aberlady Bay*, *Gullane Point* and village, and the opposite coast of Fife.

At LONGNIDDRY JUNCTION STATION, at which we arrive (five miles and a half from Drem, and thirteen miles and a quarter from Edinburgh), is a BRANCH LINE TO HADDINGTON.

HADDINGTON occupies a pleasant situation on the banks of the Tyne. It is a handsome and substantial-looking town, very much resembling the better class of English market towns, and surrounded in all directions by a fertile and highly ornamented country. It is a royal burgh of old date, uniting with North Berwick, Dunbar, Jedburgh, and Lauder, in electing a member of Parliament. Its grain market, held every Friday, has long been distinguished by the amount of business transacted at it, and the regulating power which it exercises over other markets. The town has been greatly improved of late years. Haddington has been twice burnt—first, in 1244, on a night which was signalised by the conflagration of Aberdeen, Perth, Stirling, and several other towns throughout Scotland; and a second time in the year 1598, in consequence of the carelessness of a maid-servant, who was drying clothes at a fire. It has also been repeatedly devastated by water, apparently in consequence of a liability of the Tyne to be occasionally flooded to an unusual height by heavy descents of rain in the Lammermuirs. One of its most disastrous inundations was that of 1358.

The chief object in Haddington, calculated to arrest the attention of a stranger, is the beautiful old *Franciscan Church*, now partly in ruins. It is situated on the south side of the town, within fifty yards of the river, surrounded by an extensive cemetery. This church was anciently called by a more than usually elegant monkish imagination, *Lucerna Laudonia*—the Lamp of Lothian, on account of its being kept constantly lighted, and thus rendered visible from a great distance by night, but perhaps also in allusion, partly, to the magnificent appearance of the building, and the enlightened character of its tenants. It is 210 feet long, and is surmounted by a square tower, 90 feet in height, and of beautiful architecture.

The principal object of curiosity in the neighbourhood of Haddington is *Lethington House*, a seat of Lord Blantyre.

Longniddry is a curious little, old-fashioned village, formerly much larger, and the appendage of a baronial mansion-house. Douglas Laird of Longniddry was a zealous Reformer, and had John Knox for the tutor of his children. When residing here, John often preached in the family chapel to the inhabitants; and the ruins of that edifice, overgrown in their decay by ivy and weeping plants, are yet pointed out and visited on account of the interest with which his name has invested them.

Quitting Longniddry Station, the train passes by *Cantyhall* and *Chesterhall*, and *St. Germain's House*, once a Preceptory of the Knights Templars. We next come upon *Seton Mains* and *Seton*, where the traveller finds the interesting remains of the once princely palace of *Seton*, for many centuries the seat of the Setons, Earls of Winton. A large modern château, tenanted as a boarding-school, now occupies the site of Seton House; but the old fortified rampart wall still exists, as well as the collegiate church connected with the original mansion. Seton lies upon the face of a gentle declivity, within a mile of the sea. Some old stately trees still continue to linger on the spot which they were ages ago planted to adorn. Seton House was one of those noble mansions erected in the reign of James VI. and I., which Hume remarks to have been so much superior in taste to any built during the next three or four reigns.

The Collegiate Church of Seton was built in a style of splendour suitable to the Palace. It is a handsome little Gothic edifice, with a steeple.

After passing Seton, the next object that arrests the attention is *Steele's Hospital*, a large, modern, charitable establishment, and Meadow Hill, after which we arrive at TRANENT STATION (three miles and three quarters from Longniddry, and six miles and a half from Edinburgh). *Tranent* is a large village, chiefly occupied by colliers. The mineral wealth of this place was discovered by the monks of Newbottle, who had a proprietary interest in the district; and Edinburgh appears, in the early part of the sixteenth century, to have been supplied from Tranent with coal, which was carried thither by horses in panniers.

The ground on which the battle of Prestonpans was fought, September 21, 1745, is a level tract about a third of a mile to the south of the

village, and adjoining on the other side *Prestonpans*, from which the conflict has taken its name. The stranger will remark near the Tranent Station, the monument erected to the memory of the gallant Colonel Gardiner. He was buried in Tranent churchyard.

We will now pursue our railway route from Tranent Station to INVERESK STATION, three miles beyond, during which the traveller will notice the old square tower of *Preston*, the keep of an ancient castle, and *Preston Cross* (the scene of an annual festival by the jovial citizens of Edinburgh).

ARBERRY-HILL, associated with the sad memories of Mary, Queen of Scots, is within half a mile of Inveresk Station, the ground rendered memorable for the conflict at Pinkie, so disastrous to Scotland. Inveresk Church is placed upon the top of a rising ground to the south of Musselburgh. It is a modern edifice, with a tall spire, and so conspicuous that it can be seen at a great distance in all directions. The old church, removed to make way for this, was a structure of vast antiquity.

Leaving Inveresk Station, we pass close to *Musselburgh*. On the *Links*, an extensive plain stretching between the town and the sea, a race-course has been formed.

From many points of the line a good view is obtained of the valley of the Esk. The stranger is now made aware of his near approach to the Scottish capital, by the number of handsome mansions and villas that thickly stud the country around.

On reaching PORTOBELLO, THE LINE TO HAWICK is seen. The beach at Portobello is a beautiful esplanade of pure sand, unrivalled anywhere in Scotland in its adaptation to the purposes of sea-bathing. The town owes its existence chiefly to its being a convenient sea-bathing station and summer residence for the inhabitants of Edinburgh; but it

has also more steady sources of income in a number of respectable annuitants and others, who make it their regular home, as well as in certain brick-works, potteries, and other manufactories, which have long been established on the spot. The town chiefly consists of a series of streets branching in both directions from a main one. Some of these are composed of elegant houses, suited to the accommodation of persons in almost any station of life beneath the very highest. Upon the whole, the town has the appearance of a pretty suburb.

The view from Portobello Station is very fine. On one side is seen Portobello, finely interspersed with trees; beyond it stretches the broad expanse of the Firth of Forth, with Musselburgh Bay, Prestonpans, and North Berwick Law; the Island of Inchkeith is in front, the shores and town of Fife, and the port and piers of Leith on the other side; Arthur's Seat at the foot of it.

On leaving Portobello Station the train passes over the branch railway from Dalkeith to Leith on a wooden viaduct 800 feet in length, and pursues its way behind the Cavalry Barracks of Piershill, and under the great London-road, passing the Queen's Station at Parson's Green. Splendid views now break upon the spectator—Lochend, Arthur's Seat, St. Anthony's Chapel, Salisbury Crags, the ruins of Holyrood Abbey, &c., after which the train dashes through a tunnel, 420 yards, perforating the Calton Hill. On emerging from this gloomy contrast to the scenes just beheld, the visitor again enjoys some prospects of great beauty, and is, at length, after a journey of 57½ miles from Berwick, ushered into the MODERN ATHENS.

"There is no place in Scotland which has been more influenced by such circumstances than the capital itself—Edinburgh.* Edinburgh, before the Rebellion; Edinburgh, after the Rebellion; Edinburgh, as made memorable by Scott; Edinburgh, in our own railroad times—all have their marked features of distinction; and there are many parts of the city whose history is particularly connected with one or other of these eras, to the exclusion of the rest.

"But beyond these external circumstances, the past and present features of Edinburgh have been remarkably influenced by the undulating surface of the ground on which it is built. Glasgow,

* The Land we Live in.

Liverpool, and Newcastle, and many others of our large towns, have begun their existence on the water-side, and have extended landward, as increased space became necessary—new streets branching out from, or forming continuations of the old ones; but in Edinburgh there are formidable depressions of surface, which rendered necessary a good deal of ingenuity in planning and contriving. The 'Court-end,' the city, the suburbs—all these terms have suffered more change at Edinburgh than in most British towns; and these changes have occurred quite as much from the remarkable character of the site itself, as from a necessity of enlargement to meet the increasing population of the city.

"Let us, then, in the first place, take a bird's-eye view of the portion of ground on which Edinburgh is situated, and by which it is surrounded. A clear conception of this matter will much facilitate the comprehension of subsequent details.

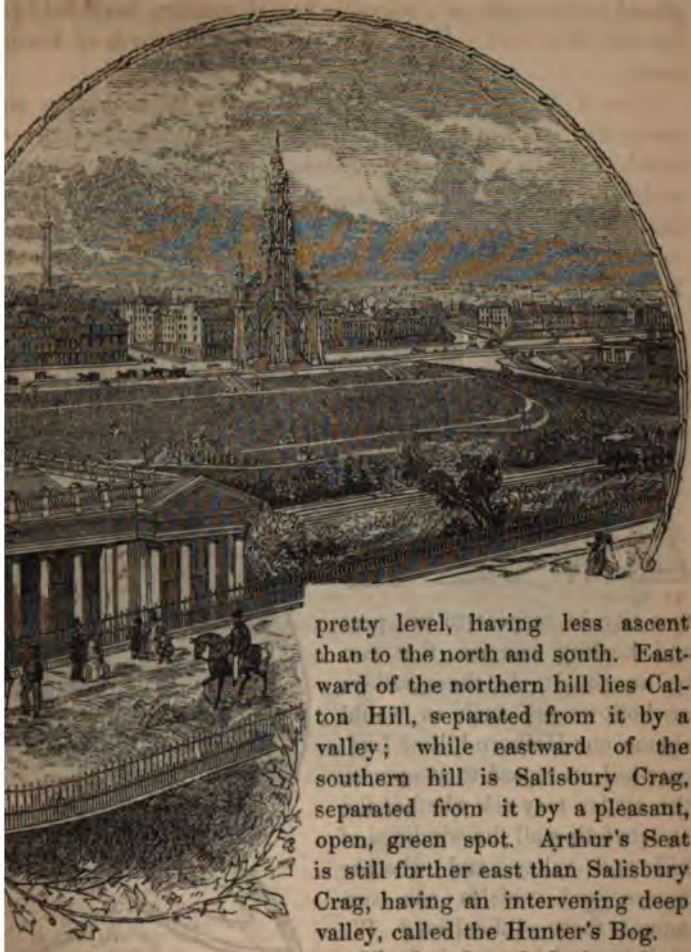
"The Firth of Forth is a wide estuary, opening into the German Ocean: it is, in fact, an expansion of the mouth of the river Forth, having Fifeshire on the north, and Edinburghshire and one or two other counties on the south. Towards the inner part of this Firth the width contracts very considerably, forming the passage of Queensferry, having the two towns of North and South Queensferry on the north and south shores. Eastward of this there is an undulating coast on the Edinburgh or southern side, studded with various towns, fishing-villages, havens, and piers. First, after passing Dalmeny Park, comes the village of Cramond, at the mouth of the river Cramond, which river is crossed by Cramond Brig or Bridge, rendered famous by an incident in Scottish history; then comes the newly-formed village of Granton, with the fine stone pier, built by the Duke of Buccleugh for the accommodation of steamers; and these are followed by a chain-pier, Newhaven village and pier, and the commercial town of Leith, with its harbour and piers; while still further east are the towns or villages of Portobello, Fisherrow, Musselburgh, and Preston Pans, all near the shore of the Firth and all on a low level. Taking Leith as a centre, we may trace a curved line of hills, comprising Corstorphine, Craiglockhart, Braid, Blackford, and Craigmillar Hills, and the famed Arthur's Seat; and these hills form a kind of cordon round the southern half of Edinburgh; or, in other words, we may say that Edinburgh is

placed in the midst of a tolerably flattish country, bounded by hills on the east, west, and south, and by Leith and the Firth of Forth on the north.

"But if this were all, Edinburgh would be analogous merely to many other cities. It is itself, however, built upon a series of hills, which, with the three or four intervening valleys, give that remarkable undulating character to which allusion has been before made. These hills we may designate the central, the northern, the southern, and the eastern; or, to come to more familiar appellations, the Castle Hill, the North Town, the South Town, and the Calton Hill. Salisbury Crag and Arthur's Seat, two hills far higher than any of the others, lie beyond the precincts of the town on the east, and can hardly be considered as forming part of the town itself, though they add not a little to the grandeur of the features presented by it.

"The central hill, by far the most important one to Edinburgh, has a remarkable shape: it is like a wedge, lying with its sloping side uppermost, having the Castle at its upper or thick end, and Holyrood Palace at its lower or thin end. This simile, however, is not very exact, unless we imagine the sides of the wedge to be bevelled off, so as to make practicable slopes from the ridge to the hollows on the north and south. The ridge lies very nearly east and west, having the Castle at the west end, and Holyrood at the east. The west end reaches an elevation of nearly 400 feet above the level of the sea, and consists of rude, rough, time-resisting rock. The rock is bare and inaccessible on the west; it has slopes of almost impracticable descent on the north and south; but on the east it communicates with the sloping street—the ridge of the wedge—which descends to Holyrood, upwards of a mile distant, in a straight line.

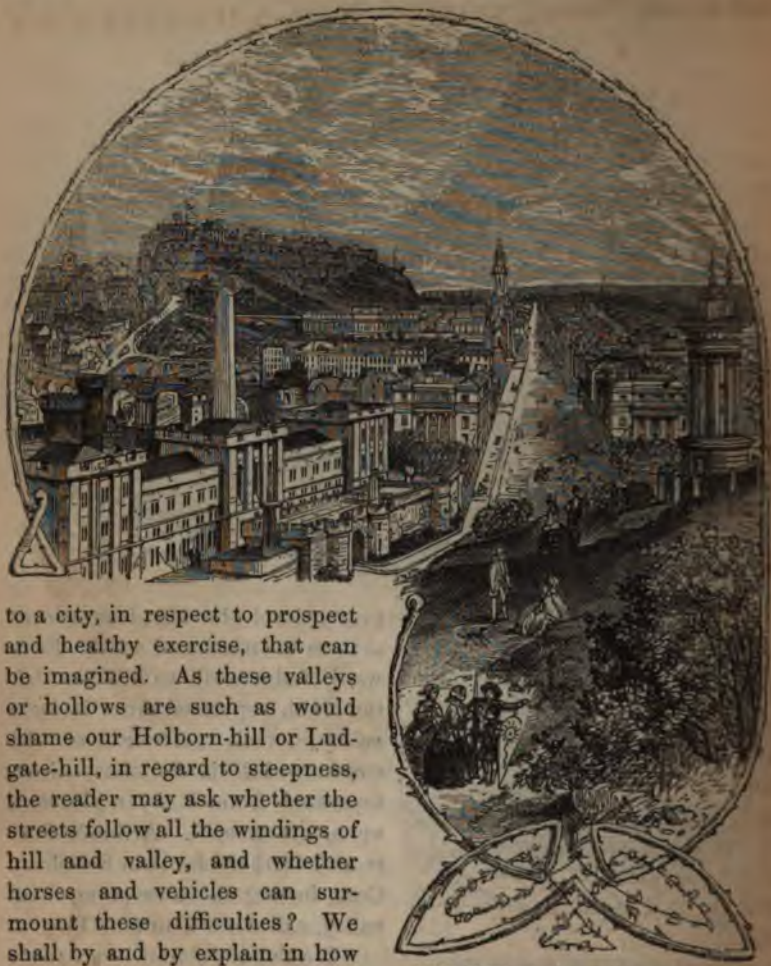
"This wedge-shaped elevation is bounded on the north and south by hollows or valleys, which separate it from other elevated ridges or hills still further to the north and south. These are not hills in the same sense as the Castle or central hill, being much less lofty and prominent; but it will be convenient to adopt the term. The southern hill rises gradually from the south valley, and then spreads away imperceptibly to the level of the surrounding country; the northern hill rises by a slope from the north valley, and then declines again towards the sea at Leith and Granton. Westward of the Castle Hill, the ground is



OF EDINBURGH, LOOKING NORTH.

pretty level, having less ascent than to the north and south. Eastward of the northern hill lies Calton Hill, separated from it by a valley; while eastward of the southern hill is Salisbury Crag, separated from it by a pleasant, open, green spot. Arthur's Seat is still further east than Salisbury Crag, having an intervening deep valley, called the Hunter's Bog.

"We therefore find that there are six elevated spots to which the tion of 'hills' may, without much impropriety, be given, and five valleys, that separate these hills one from another. The gs of Edinburgh occupy four of these hills and three of these ; while the other two hills furnish the most glorious vicinity

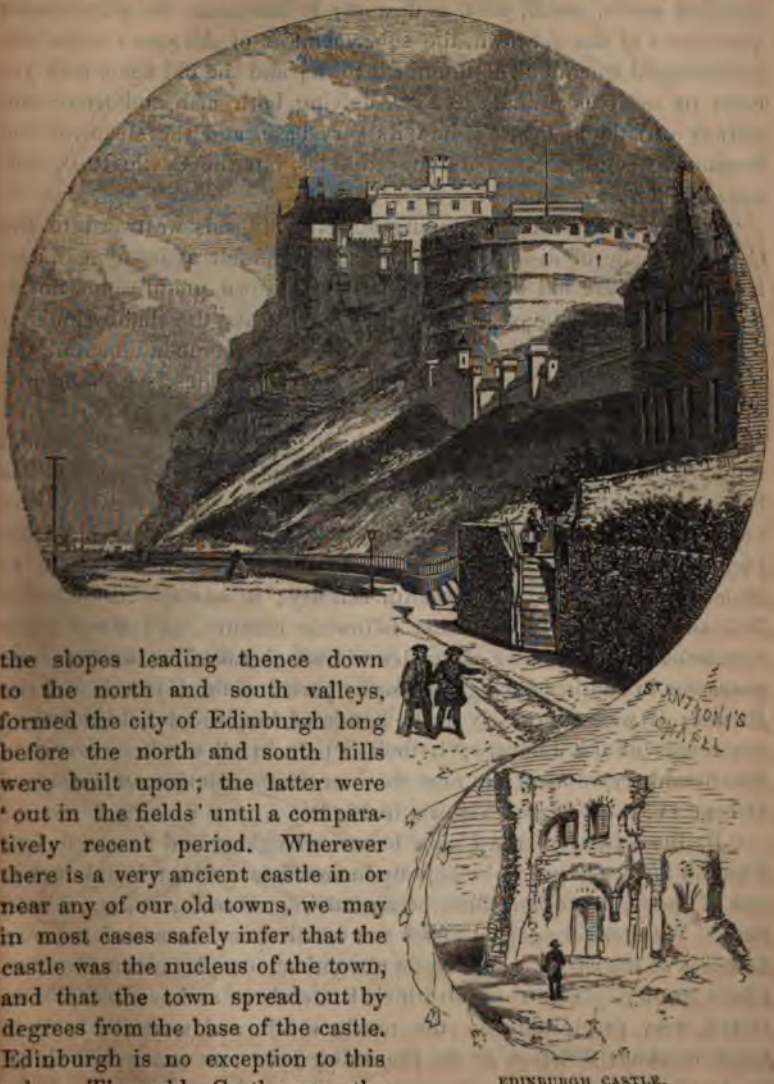


VIEW OF EDINBURGH, FROM CALTON HILL.

to a city, in respect to prospect and healthy exercise, that can be imagined. As these valleys or hollows are such as would shame our Holborn-hill or Ludgate-hill, in regard to steepness, the reader may ask whether the streets follow all the windings of hill and valley, and whether horses and vehicles can surmount these difficulties? We shall by and by explain in how picturesque a way this matter has been managed, and how the hills are linked together, in spite of the valleys beneath.

"It will readily be imagined that these hills and valleys have been *brought* within the limits of Edinburgh by degrees. 'Rome was not

built in a day;' nor was Edinburgh. The Castle Hill, and a portion of the slopes leading thence down to the north and south valleys, formed the city of Edinburgh long before the north and south hills were built upon; the latter were 'out in the fields' until a comparatively recent period. Wherever there is a very ancient castle in or near any of our old towns, we may in most cases safely infer that the castle was the nucleus of the town, and that the town spread out by degrees from the base of the castle. Edinburgh is no exception to this rule. The old Castle was the



EDINBURGH CASTLE.
(*From a photograph by* Lennie.)

centre—the heart from which all else has sprung. Its arteries have ramified north, south, east, and west; it has seen the picturesque quaintness of the old town, the sober comfort of the south town, the architectural splendour of the north town; and the old black rock yet rears its head as proudly as ever, defying both man and time: the railway whistle is heard round its very base, and the steam of the locomotive condenses on its rugged sides, but the Castle Rock still maintains most of its old features.

"When we ascend the sloping street that leads westward to the Castle, a shade of disappointment is apt to be felt at its appearance. It is not a good old weather-beaten, moss-grown, picturesque, novel-reader's castle. The soldiers in their red coats, the shabby-looking barracks which have been built for their accommodation, and the changes made from time to time in the approaches, somewhat disturb one's notions of an ancient castle. But when we have clambered round the kerbed roads and paths which lead up to the bastions and ramparts, we cannot but remember of how many a busy scene it has been the theatre. It was the fortified castle-rock of the Ottadini, before the Roman invasion; it was the *Castrum Puellarum* of the Pictish kings; it afforded a refuge to the widow and children of Malcolm Canmore, in the eleventh century; it was the residence of William the Lion in the next following century, and many other monarchs in succeeding centuries; it was bandied about from one possessor to another during the stormy period of the Edwards and the Bruces; it was alternately in the hands of kings and nobles during the reigns of the Jameses; it took a part in all the busy events of Scottish history during the next three or four centuries; it welcomed George IV. in 1822, and Victoria in 1842.

"By the articles of the Union between England and Scotland, four Scottish fortresses are to be kept up in an efficient state: Edinburgh is one of these; the other three being Stirling, Dumbarton, and Blackness. We therefore expect to see the usual concomitants of military defences at the castle. The castle altogether occupies about six acres of the ground. The rock on which it stands is, as has already been stated, very precipitous on the north, south, and west; its highest point is about 300 feet above the valley below, or nearly 400 above the level of the sea. On its eastern side it throws off a glacis or

esplanade, communicating with the High-street, and affording a parade ground and promenade. The view from hence is very striking.

"From the parade we advance westward to a barrier of palisades, a dry ditch and a drawbridge, flanked by low batteries; then a guardhouse; then a strong archway, passing under a building used as a state prison; then a battery, an arsenal, and barracks. A second strong gateway gives entrance to the inner or higher fort, which contains the oldest portion of the castle. There is a large pile of building, containing what were once the state apartments of Queen Mary; and the Crown-room, in which are lodged the regalia of Scotland.

OLD PALACE IN CASTLE.

"Two of the batteries of the castle, the half-moon and the bomb-batteries, command a glorious view over the city and its environs. Eastward, past the lofty buildings of the castle, may be seen the ancient part of the city, backed by Arthur's Seat; towards the north-east, the eye glances over the gardens and railway of the North Valley to the Calton Hill and the superb buildings near it; northward lies the new town of stone houses, 'stretching its white arms to the sea,' and beyond is the Firth of Forth and the Fifeshire hills; while eastward are the Corstorphine hills, backed by a dim outline of mountains far in the west.

"One of the objects to be seen at the castle is the ponderous gun, designated 'Mons Meg,' placed on the bomb-battery, and pointing

EDINBURGH, FROM THE CASTLE.

its mouth very harmlessly (for it is never now fired) over a portion of the New or North Town. 'Mons Meg' is a curiosity for which the 'gude folk' of Edinburgh have a great affection. It is supposed that this monster cannon was fabricated in the time of James IV.; but how it obtained its familiar name does not seem to be known.

"MONS MEG."

"Leaving the castle, we commence the descent of that remarkable line of street which extends thence to Holyrood, almost in a direct line from west to east. It consists of four distinct portions—Castle-hill, Lawn-market, High-street, and Canongate—all names well known in the past history of Edinburgh."

We shall notice a few of the more prominent antiquarian feature of the city, under the designation of

Ancient Edinburgh.—Edinburgh was not a town of much consequenc till the latter part of the fourteenth century. Froissart speaks of it i 1385 as the Paris of Scotland. He says it did not contain so many a 4,000 houses, meaning, beyond a doubt, 400, for it then consisted o but a single street. No houses of that era survive to prove how smal rude, and frail they were. There are not probably in Edinburgh an houses of older date than the close of the fifteenth century. Abou that time the Cowgate was building (a name which appears to be corruption of "Sou'gate," *i. e.* Southgate), as a new town or subur for the accommodation of higher classes of the people. A few of th primitive houses of the Cowgate, built about 1490 or 1500, still exis They are the contemporaries of many castles, the ruins of which ar now scattered over the country.

The style of doors seen in all these early wooden houses must b pronounced greatly superior in elegance to any doors given to moder houses either in Edinburgh or in London. The next stage of hous building gives us the same form, with merely a little more elevation, and the addition of some ornamental work. About 1540 houses were three and four stories high. The gallery in front of the first floor was usually open ; there the family could promenade and enjoy the open air in privacy and comparative safety. Of the wooden fronted houses of about 1540 we have still several interesting specimens, serving to recall to us Mary's reign. There is a fine example at the head *of the West Bow.*

HEAD OF WEST BOW, EDINBURGH.

The covered space in front of the booths is still open, and used for the exhibition of merchandise, though of an humble kind. In this respect, the house forms a last surviving fragment of what the High-street was, in mercantile respects, in the sixteenth century. Three or four specimens of this form of house are still to be seen along the north side of High-street. The characteristic features of all are alike; the strong skeleton-work of stone, with the wooden front six or seven feet in advance, the outside stone-stair projecting into the street, and the handsome moulded doorway. One fine specimen, opposite the head of Riddry-street, is worthy of special notice on account of its double form. In 1572, when the Castle and the city were in possession of the Queen's party, and beleaguered by the troops of the Regent, the exigencies of the people for fuel led to the demolition of many of the timber buildings.

John Knox's house, so named from having been the residence of the famous Reformer, is situated at the contraction of the High-street into the Netherbow. It was built in the 12th century, and is, perhaps, one of the oldest houses in Edinburgh. It is irregularly shaped in the Flemish style, and has an external stair, small windows, and small rooms. It became so rickety, towards 1849, as to be then condemned by the authorities; but by means of public subscriptions it was repaired and strengthened. On the corner of it is a small figure of Moses receiving

JOHN KNOX'S HOUSE, HIGH-STREET, EDINBURGH.

the tables of the law, stretching his hand towards a glory round the name of the Supreme Being, in Greek, Latin, and English. Along the top of the ground-floor is an inscription, in antique letters,—"Love God above all, and your neighbour as yourself."

The house was occupied, before John Knox's time, by George Durie, Abbot of Dumfermline. It was provided and furnished for Knox by the Town Council, on his being elected minister of Edinburgh, in 1559. Here he wrote the greater part of his "History of the Reformation."

The apartments now shown as Knox's are his sitting-room, his bed-room, and his study. They serve as an interesting specimen of a domicile of the 16th

THE OLD TOLBOOTH.

century. The only piece of furniture that belonged to Knox was his chair, which stands in his study. The house is shown to visitors, at a charge of sixpence each, from ten till four o'clock on Saturdays.

The *Old Tolbooth*, which the inhabitants sometimes quaintly called "the Heart of Mid-Lothian," and which under this name has become so renowned in the novel of Sir Walter Scott, formerly stood in the middle of the High-street, at the north-east corner of St. Giles's Church. This gloomy-looking building was built in 1561; from that period until 1640 it served for the accommodation of Parliament and the Courts of Justice, as well as for the confinement of prisoners; but after the erection of the present Parliament House, it was employed only as a prison. Its situation, jammed as it was into the middle of one of the chief thoroughfares of the city, was greatly inconvenient; and in 1817, when the new prison was prepared for the reception of inmates, the ancient pile of the Tolbooth was demolished. The great entrance door, with its ponderous padlock and key, were removed to Abbotsford, where they are now to be seen, with other curiosities of the place.

VIEW OF THE HOUSE IN WHICH PRINCE CHARLES EDWARD SLEPT, BEFORE THE BATTLE OF PRESTON PANS.

The most vivid and interesting picture of this celebrated building will be found in the pages of Scott, and the visitor to Scotland will find occasion to consult the wonderful productions of his pen constantly.

We append a view of the house in which Prince Charles is said to have slept before the battle of Preston Pans.

General Topography. I. *The Old Town.*—At Abbey St. Cuthbert's, a small area in front of Holyrood House, situated in the middle of the hollow between Salisbury Crags and Calton Hill, is the Edinburgh termination and lowest part of the old or original town. Leaving this

area at its north-west angle, the Canongate moves away west, over a distance of 650 yards—climbing on its middle or highest part the wedge-like ridge or central hill on which the chief part of the city stands, and sending down over the north and south face of the hill numerous streets and closes. Continuous with the Canongate, the High-street climbs the upper part of the hill, undergoing intersection at right angles by a great line of street which runs south and north through the whole extent of the Old Town, and ploughing its way, under the names of Lawn Market and Castle-street, up to an esplanade or open and elevated area before the gate of the Castle, at a distance of 900 yards from the commencement of the Canongate. This street, which opens on its south side, round both ends of St. Giles' Cathedral, into Parliament-square, is very spacious; and, over its entire length, consists of high houses, interspersed with various public edifices, and wears an antique and remarkably imposing appearance. Near its west end, 170 yards before it opens into the esplanade of the Castle, a spacious street-way goes off from its south side, suddenly debouches, and passing along the edge of the Castle Rock, sends off Castle-terrace, nearly parallel to the west face of the Castle, to open a communication with the south-west angle of the New Town.

Returning to Abbey St. Cuthbert's, or the area before Holyrood House, and again leaving this at its south-west angle, a narrow street called the South Back of Canongate runs west, parallel to Canongate, and sends off, on its south side, along the base of Salisbury Crags, the celebrated path of Dumby Dykes. The South Back of the Canongate is 750 yards in length; and pursues its way along the south base of the central hill of Edinburgh, and, for some little distance, along the gorge between it and the south hill. Cowgate, a continuation of the back of the Canongate, wends along the deepest part of the gorge; and, though high in its lines of antique houses, passes quite underneath the over-spanning central arch of South Bridge, and the spacious stride of George IV.'s Bridge. Cowgate is narrow, and, along with the lanes which run from it, is the most densely peopled and poorest district of the metropolis. Continuous with Cowgate, but suddenly expanding into three times its width, is the Grass Market, a spacious rectangle 230 yards in length, darkly overhung on the north by the precipitous side

of the esplanade of the Castle; but, on its south side, subtended by a gently inclined plane, the south hill of the Old Town beginning, at the end of Cowgate, to slope towards the west. The west end of the rectangle is closed up by the Corn Market, and the east end is deeply associated with the holiest and most affecting reminiscences of Scottish history, as the scene of the last sufferings and the fervid testimony of the dying supplications of many a devout martyr during the sanguinary persecutions of the Stuarts.

The south end of Clerk-street, at Newington Church, is 800 yards due west from the base of Salisbury Crags, and 1,200 yards south of the Tron Church, or nearest part of High-street. Stretching half a mile away south from this point is the elegant suburb of Newington. Its principal feature is Minto-street, the great thoroughfare to the towns of Roxburghshire, to Peebles, and to places intermediate. Nicolson-street continues the line of Clerk-street north; and the South Bridge, sweeping past the extensive and sumptuous front of the College, continues the line of Nicolson-street to the Tron Church, forming the angle of South Bridge-street and High-street. North Bridge-street now continues the north line, till it is finally pent up by the majestic front of the Register Office, in the line of Prince's-street. This street, over one-third of its length, consists simply of the lofty roadway of North Bridge. The entire line of street, commencing in Clerk, or rather Minto-street, and terminating in Prince's-street, is wide, regular, well-edificed, and of imposing aspect.

The north back of the Canongate runs due west, leaving the foot of the Canongate at a very acute angle, and receding from it till, at its termination at Calton, after a progress of 800 yards, it is distant from it, or rather from the continuous line of High-street, 230 yards. It lies along the gorge or narrow hollow between the base of Calton Hill and the central hill of the site of Edinburgh; at every part of its progress it is frowned upon by precipitous declivities which Calton Hill sends down in near contact with its buildings; at its west end, in particular, it is overhung by perpendicular rocks which bear aloft on their summits the County Gaol and Bridewell; and it is skirted and traversed by the North British Railway, which approaches its terminus under the North Bridge, through this district of the city. Communicating with this street, but debouching round to the north, and nearly on a line

with Leith-wynd, Calton Street leads off along the gorge between the west base of Calton Hill to a junction with Leith-street, and thence to a communication with all the east parts of modern Edinburgh.

Beneath the North Bridge, and immediately to the west of its base, extend the spacious market-place and shambles, and the conjunct termini of the Edinburgh and Glasgow and North British Railways, all accessible, from the New Town, by handsome paths winding down off Prince's-street, and from the Old Town by rapidly descending alleys leading off from High-street, and commodious flight of steps leading off from North Bridge-street. The vale, anciently called the North Loch, intervening between the Old Town and the New, expands over a space of 315 yards by 100, intersected through its centre by the Edinburgh and Glasgow Railway, but having the greater part of its breadth laid out in ornamental grounds, and further adorned by the magnificent Gothic monument to Scott. It is then crossed by the hugely colossal earthen wall known as the Mound; and thence stretching away west, is again laid in garden-ground, till, sweeping past the north face of the Castle, it becomes the site of St. Cuthbert's Church and the Episcopal chapel of St. John's, and is lost beneath the new street of the south-west wing or suburbs of the New Town. Over half of its extent, or from the North Bridge to the esplanade of the Castle, this lovely vale is overhung along the south by the lofty gables and abutments of the towering edifices which terminate the northern alleys from the High-street; and, in grouping with them, as well as with the dark and craggy and vast outline of the overshadowing Castle, it presents an aspect of romance, and of mingled beauty and sublimity, which probably was never rivalled by any other city-view in the world.

II. *The New Town.*—The New Town of Edinburgh may be regarded as consisting of four sections: the original New Town, the second New Town, the New Town of the land of Coats, and the New Town around and on Calton Hill. A briefer nomenclature, and one sufficiently accurate, would be, the south, the north, the west, and the east New Town.

The south or original New Town stretches along the summit of the most northernly of the three longitudinal and parallel hills which form the site of the east; and extends, in length, from nearly the line of the

North Bridge on the east, to a line considerably west of the west face of the Castle. Its form is a regular parallelogram, the sides of which measure 3,900 feet, and the ends 1,090. Its principal longitudinal streets are three, Prince's-street on the south, George-street in the middle, and Queen-street on the north. Prince's-street consists of only one row of houses, having the form of a terrace, and facing the north front or towering and picturesque heights of the Old Town. Many of its edifices—all constructed as elegant and commodious dwelling-houses—are now, by a variety of devices, transmuted, enlarged, or architecturally adorned, into hotels, club-rooms, public offices, warehouses, and shops. George-street, in combined length, spaciousness, uniformity of architecture, and magnificence of vista and termination, may be pronounced unparalleled. It is 115 feet broad, and, like its sister streets, as straight as an arrow. At its ends are superb and spacious squares—the west called Charlotte-square, and the east St. Andrew's-square; both sumptuous in the architecture of their sides, and ruralized and lovely in the garden plots and shrubbery of their area.

Queen-street maintains to a great degree its original form; but the grouping of this street with surrounding objects, and the aspects thrown upon it by its peculiar locality, are entirely different and even contrasted. Its terrace is not, like Prince's-street, overlooked at a brief distance by the dark and strange forms of a loftily situated city of antiquity, but looks down, over its whole length, on a tastefully dressed area of lawn and flowers and shrubs; and across this is confronted by an array or terrace of edifices more sumptuous and modern than its own; and it thence looks over all the assembled beauties of the second New Town, away to the joyous Forth and the dim but beautiful landscape in the distance.

The second or north New Town considerably resembles, in its general outline or arrangement of streets, the original New Town, but has some graceful peculiarities, and greatly excels in the splendour of its architecture. Separated from the other by the area of Queen-street gardens, it, too, has the form of a parallelogram, disposed in two lateral terraces, a central spacious street, and two intervening minor streets, intersected by cross streets, and terminated by spacious areas. But the parallelogram is shorter and broader than that of the

south New Town. The central street is Great King-street, having the square called Drummond-place as its east area, and opening on the west end into the circular and gorgeously edificed area called the Royal Circus. The south terrace, in its straight part, is Fettes-row; and in its curved part, which forms a deep arc of a circle, is the uncompleted Royal-crescent.

Extending out like a fan from the north-west corner of the north New Town is the beautiful suburb of Stockbridge, having its main communication with Edinburgh through the Royal Circus. This cluster of variously arranged rows of buildings lies on both sides of a beautiful bend of the water of Leith; the straight line of the river being here from south to north, and the bend from that line being towards the east. Stretching away east from the north part of Stockbridge is another suburb of the north New Town, separated from it by an open area 530 yards in length, and 170 yards in average breadth, called Canonmills Meadows.

The west New Town commences 140 yards west of the south-west corner of the north New Town, or of the west end of Heriot-row, in a spacious octagon called Moray-place, closed round with edifices which are nowhere rivalled, in the aggregate beauties and embellishments and sumptuousness of their architecture, by an aggregation of private houses of similar extent. From one side of this octagon opens Darnaway-street, communicating with Heriot-row. Off Darnaway-street, at right angles, goes Wemyss-place, to fall at right angles upon Queen-street. From another side of the octagon opens Forres-street, running parallel with Wemyss-place, and forming a continuous line with Charlotte-street. From still another side of the octagon goes south-west, over a distance of 320 yards, what forms distinctly the continuation of the west New Town,—Stuart-street. The south-west end of Stuart-street passes into the middle of a deep and spacious crescent, or more properly a semicircle, called Randolph's-crescent. On a line with the chord of Randolph's-crescent, Queensferry-street runs 230 yards south-east, to fall there, at an obtuse angle, upon the north end of Prince's-street; and, on the same line, Lynedoch-place runs north-west toward Dean Bridge, which spans and overlooks the deep and beautiful ravine of Leith water, and forms the great thoroughfare with Perth and other places in the north by way of Queensferry.

The south-west side of this part of the west New Town creates a thrill of surprise and delight in the breast of many a tourist, from its being the grand thoroughfare to Glasgow and other places in the west, and the first of the numerous architectural displays of Edinburgh which meets many a stranger's observation.

The east New Town, along its entire west limit, is strictly compact with the north and the south New Towns, being divided from the former simply by the roadway of Scotland-street and Dublin-street, and from the latter by the roadway of St. Andrew's-street. In its extreme north it commences at the east end of Canonmills Meadow. From the south-east end of Bellevue-crescent, Broughton-street, a spacious and pleasingly edificed thoroughfare, runs in a direction to the east of south, till it falls, at an obtuse angle, on Catherine-street, or the line of Leith-walk. Broughton-street is the grand thoroughfare to Fife, Dundee, and other places in the north, by way of the Newhaven Ferry. From its west side goes off London-street, on a line with Great King-street; Albany-street, on a line with Abercromby-place; and York-place, on a line with Queen-street, thus forming a junction or compact union with the north and south New Towns. Between York-place and the line of Prince's-street, lanes, and little streets, and an area called a square, cluster over the rounded and declivitous brow of the north longitudinal hill of Edinburgh, and, owing to their position, present to the spectator, at a little distance, the appearance of successive ridges of building, towering aloft one above another, like the seats of a theatre.

At the south end of St. Andrew's-street we are again on Prince's-street, a continuation of which thence to the North bridge properly belongs to the Edinburgh New Town. Prince's-street is here built on both sides, and has thoroughly—more so, indeed, than any other part of Edinburgh—an aspect of business. So great is the bustle in the constant arrival or starting of stage-coaches, in the rush of carriages and cabs and omnibuses to and from the general railway terminus under the North bridge, and in the broad current of pedestrians pouring over this central point of intercommunication of streets, that one is forcibly reminded here, at least—if nowhere else in Edinburgh—of the Trongate and Argyle-street of Glasgow, and faintly even of *Cheapside*, or Ludgate-hill, or Fleet-street of London.

At the north-east angle of the North bridge stands the theatre; past the sides of which are paths, partly by flights of nine steps, down to the district of the Old Town in the adjoining hollow. Opening by a curve from the area before the theatre is Leith-street, which goes away north-east, descending a slope to the hollow, where it receives a communication from beneath Regent bridge with Leith-wynd and north back of Canongate. At the foot of Catherine-street, the thoroughfare which it and Leith-street form from Prince's-street, becomes considerably widened and spacious, shoots off in a direction a little more to the east, and henceforth, till it passes into Leith, at a distance of nearly two miles, is as straight, and in some respects even more picturesque than Prince's-street. From the foot of Catherine-street, as well as farther on, this thoroughfare is properly Leith-walk. Returning to the area, at the end of North bridge, or in front of the theatre, we find a magnificent continuation of Prince's-street, far surpassing it in the opulent architecture of its edifices, leading off in a straight line with it, and along a complete though artificially formed level, to a point about a third or a half-way up the ascent of Calton-hill. This is called Waterloo-place. For about 50 feet it is lined by ornamental pillars and arches of the Corinthian order, the ledges of Regent bridge, which carries it across the gorge at the base of Calton-hill, and in general it consists of superbly-finished houses of four stories, which, towards Prince's-street, have a pediment and pillars above the lower story. On the north side of Waterloo-place is a large tenement, built at an expense of £30,000, and long, and still in part, used as an hotel; and on its south side are the Stamp-office and the General Post-office. Though these edifices are in the best style of Grecian architecture, they no more than symbolise with the other structures of the street. At nearly 300 yards distance from Prince's-street, Waterloo-place runs against a shoulder or projection on the side of Calton-hill, and debouches to the south-east. At the point of contact with the bulky obstacle, it sends up, for its north side, a flight of steps, by which the level of the far-seeing promenades of Calton-hill, and the esplanade of the paths which lead up to its summit, are attained. While Waterloo-place, or rather the spacious roadway called London-road, in continuation of it, is making its progress, it is winged on its south side by the Gaol and Bridewell,—of very picturesque

appearance, and romantically seated on a cliff which overhangs part of the Old Town. London-road again and a third time debouches, running along the side of Calton-hill, and forming an esplanade or shelf in its declivity; and after passing the Royal High School on the north, and a cluster of monuments or small ornamented cemetery on the south, slopes gently away to the north-east, forms a junction, about 230 yards from the east base of Calton-hill, with the great thoroughfare to London, leading off in Leopold-place from Leith-walk, and thence stretches away round the northern base of Arthur's seat to Piershill barracks and Portobello. Just after passing the Royal High School, London-road sends off, at an acute angle on its north side, a communication, round the east face of Calton-hill, with the upper parts of Leith-walk. This, like the road itself, is an esplanade or shelf on the face of the hill, and is lined on the higher side with a row of superb and uniform houses, which command much of the brilliant prospect seen from the more elevated promenades, and which, under the names of Regent-terrace, Carlton-place, and Royal-terrace, sweep round the hill, over a distance of about 1,000 yards, describing the figure of the orbit of a comet when approaching and leaving its perihelion. At its west end, Royal-terrace sends down a communication with Leopold-place, at the head of Leith-walk.

Civil Edifices.—The abbey and palace of *Holyrood*, the metropolitan palace of the kings of Scotland, demand our first attention. Holyrood Abbey was founded A.D. 1128. It was denominated "*Monasterium Sanctæ Crucis de Crag*," that is, "the Monastery of the Holy Rood," or "Cross of the Crag." The latter term respects its situation, as having been erected in the vicinity of that rocky precipice now called Salisbury Crags. The royal palace of Holyrood has been called "the residence of our ancient kings;" but this description is not applicable to it in the same extent as to some other of our palaces. From a deed of James IV., dated 1506, it appears that during his reign there was a royal palace distinct from the monastery of Holyrood, and in its immediate vicinity. But the abbey and all the edifices in its vicinity were burnt by the English in the minority of Queen Mary, and nothing left standing but the body of the church, which was a magnificent Gothic structure. The English paid a posterior visit to *Holyrood* during the minority of Edward VI., immediately after the

fatal battle of Pinkie. The present fabric was erected according to design furnished by Sir William Bruce, a celebrated architect in the reign of Charles II. It was at the same time ordered that the church should be completely repaired, and as it had been formerly the only parish church of the Canongate, that it should be set apart as a chapel royal. "It was accordingly fitted up," says Grose, "in a very elegant manner. A throne was erected for the sovereign, and twelve stalls for the knights of the order of the Thistle; but, as mass had been celebrated in it in the reign of James VII., the populace giving vent t their fury at the time of the Revolution, despoiled the ornaments the inside of the church, leaving nothing but the bare walls. Nothing, regarding the history of this palace, has given it equal interest with its being the more general residence of that beautifu queen, who, as she had been sent to France in her infancy, to avoi the rough courtship of Henry VIII. for his son, returned from it widow, and almost an entire stranger to that people whom she wa called to govern. In the second floor are Queen Mary's apartments in one of which her bed still remains. Near the door which lead from the bedchamber into this apartment is shown a private staircas in the solid wall, communicating with a suite of rooms below, which perhaps, were those occupied by Darnley, as it is known he conducte the conspirators by this passage into the presence of his wife Pennant, after particularizing "some good portraits" in the othe rooms, remarks that "the gallery of the palace," which "takes u one side," is filled with colossal portraits of the monarchs of Scotland These, indeed, except a very few, afford a far better proof of t

HOLYROOD PALACE.
(*From a photograph by Lennie.*)

fertility of the painter's fancy than of the correctness of his taste.

HOLYROOD CHAPEL.

The gallery itself is 145 feet in length by 25 feet in breadth. The apartments afforded an asylum to Charles X. of France, then Monsieur, with a few of the emigrant nobles, betwixt 1795 and 1799, when there was no safety for them in their own country; and the same royal personage, when a second time driven from his indignant country, found refuge with his family here. In the year 1822, George IV. gladdened the long-deserted halls of Holy-

EXTERIOR OF HOLYROOD CASTLE.
(*From a photograph by Lennie.*)

rood with his royal presence; and in 1848, and again in 1850, Queen Victoria paid a brief visit to the palace. Government has recently laid out a considerable sum of money in repairing and renovating

HOLY ROOD BY MOONLIGHT.

this venerable structure, and enclosing it on two sides with a magnificent iron palisade.

On the north side of High-street is the *Royal Exchange*, commenced in 1753, and finished in 1761 at an expense of £31,457. It is a large and elegant square, with a court in the centre. The building contains the magistrates' court-room, the apartments of the town-council, and various offices connected with the city. Nearly opposite to the Royal Exchange is Parliament-square, entered by openings at both ends of St. Giles' Cathedral, and having that ancient edifice at its north side. The square is a small area, built entirely round on three sides by public edifices, consisting of the Exchequer, the Justiciary Court, the Court of Session, the Parliament House, and the libraries of the faculty of advocates, and the writers to the signet. The *Parliament House*, built on the south and west of this square in the form of the letter L,

was begun in 1631 and completed in 1640, at an expense of £11,000. But its present front—consisting of an arcade below and open galleries above, with pillars supporting a continuous cornice—was erected in 1808. The building is 123 feet long; at its narrowest part 60 feet broad, at the widest part 98 feet; and it occupies so singular a site that, though 60 feet high in the rear, it is only 40 feet high along both its northern and its eastern front. The large hall, formerly occupied by the parliament of Scotland, and now known as the outer house of the Court of Session, one of the noblest apartments in the kingdom, extends 122 feet in length and 49 feet in breadth, and has a beautiful oaken floor and roof,—the latter constructed in the same style of open wood-work as the roof of Westminster Hall. Projecting west from Parliament House towards George IV.'s bridge, and presenting a front towards the spacious thoroughfare along that bridge across the Cowgate, is the *Advocates' Library*, founded in 1682 by Sir George Mackenzie; and which, by several large accessions, and a constant accumulation, has become the largest and most valuable in Scotland. The number of printed volumes is 148,000; and of manuscripts, 2,000. The *Signet Library* adjoins Parliament House on the north, and stretches west, presenting architectural fronts to Parliament-square and Lawn-market. It is of Grecian architecture, and possesses two spacious and handsome apartments on different stories. The upper room is probably the most elegant apartment of its size in Scotland, and of very beautiful proportions. It has on each side a range of Corinthian pillars, and in the centre a dome or cupola. The room is 132 feet long and 39 broad, and is accessible by a grand staircase. The library contains about 70,000 volumes. The *County Hall* stands at the west termination of the Signet Library, and presents fronts to George IV.'s bridge, to Lawn-market, and to St. Giles' Church, or the west ingress to Parliament-square. The last of these is an elegant portico of four fluted columns, with finely-carved capitals, overshadowing a flight of steps leading up to the main entrance, which is modelled after the Choragic monument of Thrasyllus. The room in which the county meetings are held is in the north end of the edifice, and measures 50 feet in length, 26½ in width, and 26 in height. There are apartments also for the sheriff's court, and for various *functionaries* employed in the business of the county. The *Victoria*

Hall, situated on the Castle-hill, nearly in a line with the Mound, is a splendid Gothic edifice, 141 feet in length, with a spire rising 241 feet above the level of the porch. It is for the use of the General Assembly. The *Normal Institution*, on the south side of Castle-place, is a large and elegant building, erected at a cost of £8,500. It is intended to train teachers for the General Assembly's schools, and from 20 to 30 female students as governesses.

The new *Corn-market*, on the south side of the Grass-market, is a massive building in the Italian style, with a main front of 98 feet, and two wings, both receding 13 feet. The area in which the market is held measures 152 feet from north to south, and 92 feet from east to west, and is supported in the centre by two rows of metal pillars. Facing Bank-street, and looking up the slope of that short street to High-street, but presenting a back front to the New Town, and situated a few paces east of the south end of the Mound, is the office of the *Bank of Scotland*. This is an edifice of considerable architectural merit, ornamented and surmounted by a dome; and was erected at an expense of £75,000. *The General Register House of Scotland*, situated at the east end of Prince's-street, and looking down the thoroughfare of North bridge, is one of the most splendid edifices of Edinburgh. It was founded in 1774, and was constructed from a design of the celebrated Robert Adams; and combines the utmost internal commodiousness with interior architectural beauty in the best taste of the simple Grecian style. The great room, where are deposited the elder records, is in the centre of the building, lined with books over all its walls, and balconied all round, at mid-elevation, with a raised gallery. This saloon is 50 feet in diameter and 80 feet high, and is lighted from the top by a window of 15 feet diameter. Nearly opposite the Register House, and joining the Waterloo Hotel, is Howard's Operetta House (the property of John Rampling, Esq.), formerly known as the Waterloo Rooms; it was opened May 25th, 1861, and the space for the audience is nearly equal to that in the Old Theatre Royal, which was removed in 1860. On the south side of George-street are the *Assembly Rooms*. The front is plain and unpretending, relieved only by four Doric columns as an apology for a portico. The principal room in the front building, looking towards George-street, is 92 feet long, 42 feet wide, and 40 feet

THE ROYAL BANK, ST. ANDREW'S SQUARE, EDINBURGH.
(*From a photograph by Lennie.*)

high; and, besides being appropriated to balls and concerts, is occasionally used for public meetings; but a much larger room has been erected in the rear of the original building, which is generally appropriated to public meetings and musical performances. The new *Commercial Bank*, on the south side of George-street, occupies the site of the old Physicians' Hall. It is a magnificent building in the Corinthian style, with a singularly light and elegant façade 35 feet in length, and a portico supported by six Corinthian columns, each 35 feet high. The tympanum is adorned with sculptures in bold relief, and the internal arrangements of this beautiful building are every way worthy of its external elegance. The *Edinburgh and Glasgow Bank*, on the north side of George-street, is a fine specimen of rich street

BRITISH LINEN COMPANY'S BANK, ST. ANDREW'S SQUARE, EDINBURGH. (From a photograph by Lennie.

architecture. On the east side of St. Andrew's-square is the elegantly edificed office of the *Royal Bank*. The building stands apart from the neighbouring erections, and occupies a considerable recess from the street-line. The *Western Bank*, on the west side of the square, is a very ornate building in the Italian villa style. *The British Linen Company's Bank*, on the east side of the square, is a very superb building. Its front presents a row of statues, on rich ancones, rising from the architraves and capitals of tall gorgeous pillars. Its interior also presents some very rich work. In Waterloo-place, on the south side, as already noticed, stand the *Stamp Office* and the *General Post Office*, which is about to be removed to the site of the late Theatre Royal, the removal of which is amply compensated for by the erection of the Operetta House, which, by the way, the proprietors have rendered most comfortable, by great improvements in ventilation, &c.

At the east end of Waterloo-place, on the south side, is the *Town and County Gaol*, which was founded in 1815, and finished in 1817. It is an extensive building, in the Saxon style of architecture, and somewhat castellated. Along the street-line are apartments for the turnkeys. Behind these, with an area intervening, is the Gaol itself, 194 feet long, 40 feet wide, and four stories high, with rows of small grated windows. In the centre is a chapel with windows larger and not grated. Along the interior run corridors, opening into forty-eight cells, each eight feet by six, besides some other apartments of larger dimensions. From the lower flat behind, a number of small airing grounds, separated by high walls, radiate to a point, where they are all overlooked and commanded by a small octangular watch-house, occupied by a deputy-governor. Further back, and perched on the edge of a precipice which overhangs the Old Town, is the castellated house of the governor. Immediately on the east side of the gaol, separated from it by a high spiked wall, stands *Bridewell*. In front of it, shielded by a high wall and ponderous gate on the street-line, is a neat house for the governor. Bridewell itself is of a semicircular form, and has five floors, the highest of which is distributed into storerooms and an hospital. All round on each floor, at the middle of the breadth, is a corridor, with cells on each side, lighted respectively from the interior and the exterior of the curvature. Those on the inner

side are chiefly used as workshops, and can all be surveyed from dark apartment in the governor's house, without the observer bei himself observable. On a flat exposed piece of ground, on the summ of Calton Hill, north of the National Monument, stands the N *Observatory*. It has the form of St. George's cross, sixty-two feet lo each way. The centre is surmounted by a dome, thirteen feet diameter; and has a pillar rising up to the dome, nineteen feet hig for the astronomical circle.

Bridges.—The *South Bridge* consists of twenty-one arches, and w founded in 1785, and opened in 1788. To the eye of a stranger, i existence is not readily obvious. Except at the central arch whi spans the Cowgate, and where there are simple ledges, nothing is see upon it but two lines of neat buildings and spacious shops, formi a level, a bustling, and in all respects an ordinary-looking street— The *North Bridge* was founded in 1763, commenced in 1767, inte rupted by the giving way of the vaults and side-walls at the sout end in 1769, and completed in 1772, at an expense of about £18,00 It consists of three great arches, two small open side-arches, and series of small arches at each end, which are occupied as vaults. Th width of each of the great arches is seventy-two feet; the breadt or thickness of each of the piers is thirteen and a half feet; the widt of each of the open small arches is twenty feet; the length of the whol open part of the bridge is 310 feet; the length of the entire bridg from High-street to Prince's-street, is 1,125 feet; the height of th bridge, from the top of the parapet to the base of the great arches, sixty-eight feet; the breadth, within wall, is, over the open arche forty feet; and at each end, fifty feet.—*George IV.'s Bridge*, which goe off at right angles from the Lawn Market opposite Bank-street, an stretches across the Cowgate to a point near the south end of Candl maker's-row, was projected in 1825, and completed in 1836. It is i all respects a splendid erection, and has three open double arches ov the Cowgate besides seven concealed arches at the ends. Part of the li is edificed with houses and public buildings, and wears the appearanc of a street.—The *King's Bridge*, constituting the principal feature the New Western approach, was projected and completed about th same time as George IV.'s Bridge. It spans the hollow ground o the south side of the Castle Rock in a single arch, and has long a

roaches along the face of the Castlebank to the Lawn Market on one nd, and on to a point near Port-Hopetoun on the other.—*Regent Bridge*, in Waterloo-place, was founded in 1815, and completed in 1819. It has one open arch over the Low-Calton, 50 feet in width, and about the same measurement in height. The ledges over this arch, or in the space where the bridge has not strictly a street appearance, are surmounted by Corinthian ornamental pillars and arches.—The *Dean Bridge*, over the water of Leith near Randolph-crescent, completed in 1832, a stupendous and brilliant structure, carried across a ravine, consists of four arches, each 96 feet wide. The bridge is 447 feet long, and between the parapets 39 feet broad. The roadway is higher than that of almost any other bridge in Scotland, passing at 106 feet above the bed of the stream.—The *Earthen Mound*, stretching across the site of the quondam North Loch from the end of Hanover-street in Prince's-street, to a point west of the end of Bank-street, though not a bridge, is a succedaneum for one, and may be allowed a place in description where there ought to have been a bridge to be described. The existence of this clumsy, enormous, and unremovable apology for a bridge has been justly deplored by almost every topographical writer on the metropolis. Huge as the mass is, it originated in the contents of the extensive excavations for the sunk floors of the New Town buildings. It is upwards of 800 feet in length; on the north upwards of 60 feet in height; and on the south about 100. Its breadth is proportionally much greater than its height, averaging probably 300 feet. It is computed to contain upwards of 2,000,000 cart-loads; and on the very moderate supposition that each load, if paid for, was 6d. in value, it must have cost the enormous sum of £50,000.

On the summit of the highest rocky eminence of Calton-hill stands *Nelson's Monument*—a conspicuous object in almost every view of Edinburgh from sea or land. The base is a battlemented edifice, divided into small apartments. From this edificed base rises, to the height of more than 100 feet, a circular, hollow turret, battlemented at the top, climbed by a staircase within, and surmounted by a flagstaff. Near Nelson's Monument, a little to the north, on the summit of a knoll, stand the twelve pillars of the National Monument,—a structure projected in commemoration of the Scotsmen who fell in

NELSON'S MONUMENT, CALTON HILL.

the land and sea fights consequen on the French revolution; and, wit a splendour of design correspondin to the greatness of the object, mean to be a literal restoration of th Parthenon of Athens. The pillars it which have been erected are gigantic proportions, cost each u wards of £1,000, and were designe to form the west range of the entir structure.—On the face of Calton-hil overlooking Waterloo-place, is Dugal Stewart's Monument, erected in 18 from a design by Mr. Playfair; a restoration, with some variation of the Choragic Monument of Ly crates.—On the south-east angle the New Observatory is Professo Playfair's Monument, a square, unin scribed edifice of solid stone, enclosed with a rail.

NATIONAL MONUMENT, CALTON HILL.

On the east side of Nicolson-street, south of the exit of Drummond-street, stands *Surgeons' Hall*, or the Hall of the Royal College of Surgeons. The building is modern, large, and elegant, with a fine portico, and cost about £20,000. The interior is arranged into several very spacious apartments. The pathological museums are extensive, and well fitted to aid surgical studies. On the south side of Queen's-street is *Physicians' Hall*. On the north end of the Earthen Mound, and presenting shorter fronts to Hanover-street and the Old Town, and larger ones to the views along Prince's-street, stands a magnificent oblong edifice called *The Royal Institution*, one of the most handsome modern buildings in Scotland. It was founded in 1823, and is borne by a substructure of wooden piles and cross-bearers, rendered necessary by the ground being "travelled earth." Immediately to the south of this building is another public building, a very handsome edifice, which serves as a gallery for the Royal Scottish Academy and some other objects of public utility.—In Prince's-street, west of the Mound, is the *New Club*, a sort of joint-stock hotel and reading-room, for the exclusive use of an association of noblemen and gentlemen, the members of which are elected by ballot.—On the lands of Inverleith, nearly one mile north of the city toward the sea, is the *Royal Botanic Garden*, twelve acres in area, and transplanted from a former site in 1822-24. The surface declines slightly to the south and is disposed in plots and promenades of great beauty and variety.

DUGALD STEWART'S MONUMENT, CALTON HILL.

EDUCATION.—*The College* presents its main front to South Bridge-street. It is a regular parallelogram, 356 feet long and 225 feet wide, extending its length east and west, and having in the centre a very

spacious court. The main front is of exquisite and stupendous proportions, and superb and Grecian in its architecture; but, in common with the entire building, is so pent up by the pressure of the street that it can nowhere be seen to advantage. The continuous range of building round the inner court is in a very tasteful Grecian style, and has an elegant stone balustrade, forming a kind of gallery, interrupted only by the entrance, and by flights of steps to the library, the museum, the hall of the Senatus Academicus, and the several class-rooms. At the angles, and on the west side, are spacious piazzas. The library, on the second floor of the south side, is a noble hall, 198 feet long and 50 feet broad, with a beautiful roof of stucco-work, and contains about 90,000 volumes, besides a collection of antiquities, sculpture, and articles of vertû. The museum, situated on the west side, occupies two rooms, each 90 feet by 30, on separate floors. The University of Edinburgh originated in a bequest of 8,000 merks by Robert Reid, Bishop of Orkney before the Reformation. James VI. devoted towards its erection and support all the houses belonging to the religious foundations within the city. In 1583 it was opened for the labours of a single professor, the amiable Robert Rollock; and in 1597 it acquired a second professorship, and was presided over by Rollock as principal. In 1720 the study of medicine was introduced to its *curriculum*, and rapidly promoted its prosperity, till it eventually won for the university the proudest name in Europe. No college probably can boast of a longer or more brilliant array of eminent men, whether as professors or alumni. The patronage of seven of the chairs is vested in the Crown; of three, jointly in the Faculty of Advocates, the Faculty of Writers to the Signet, and the Town Council; and of all the rest, in the Town Council and Magistrates. The Lord Provost of the city, but only in a titular sense, is Lord Rector.

The *Free Church College* is in the English collegiate style of architecture, and, from the elevation of its site at the head of the Mound, is one of the most prominent buildings in the city. It measures in front 135 feet, and extends south 177 feet. The main entrance fronts the Mound, and is flanked by two square towers, each 121 feet in height. The quadrangle measures 85 feet by 56. The number of class-rooms is nine. The estimated cost of the building is £30,000.—On the south face of Calton-hill, a little above the line of

London-road, stands the *High School*. The building, worthy of its magnificent site, is of pure white stone, and consists of a central part of two wings, extending about 270 feet in front. The central building is a pediment advanced upon a range of Doric columns. The interior is distributed into a large hall, 70 feet by 43,—a rector's class-room, 38 feet by 38,—four class-rooms for masters, each 38 feet by 28,—a room for a library, and two small rooms attached to each of the class-rooms. The area of the school and playground is two acres, and was formed into a level by deep cutting in the face of the hill. The edifice, founded in 1825, cost, with its appurtenances, about £30,000. There are a rector and four classical teachers, each of the teachers carrying a class round a circle of four years of progressive study, and then receiving a new class. Except small allowances from the Town Council, the fees constitute the salary, and are 15s. a quarter for the masters' classes, and 16s. for the finishing or maturing class of the rector. The High School is traceable, under the name of the High Grammar School, as far back as 1519.—North of Henderson-row, near the water of Leith, is the *Edinburgh Academy*, of similar character and design to the High School. The school-house is a low, neat building, constructed with reference more to interior commodiousness than to exterior display. This academy was founded in 1823, by proprietary shares of £50 each, raising a capital of £12,900, capable of being augmented to £16,000. It is more aristocratic in its plan than the High School, or rather, is conducted on principles which render it less accessible to the children of the middle classes, and has a longer period of study and larger fees—the former being seven years, and the latter £7 for the first year, £9 for the second, £11 for the third, and £11 10s. for each of the succeeding years. There are a rector, four masters for classics, two for writing, one for mathematics, and one for English literature.

Institutions, Charities, etc.—At Morningside, a village or suburb 1½ mile south of Edinburgh, on the road to the Braid-hills, is the *Lunatic Asylum*, founded in 1810. This is a large handsome edifice, surrounded by elegant garden-grounds, enclosed by a high wall, and placed in a salubrious situation.—The *City Poor's House* is situated within the angle of Bristo-street and Teviot-row, considerably back from the roadway, so as to look down on an open area. There are poor-houses also

for Canongate and the parish of St. Cuthbert's. The three establishments are aggregately maintained at a cost of £12,000 or £13,000 a year.—The *Royal Infirmary*, built during the reign of George II., stands on the south side of Infirmary-street. The edifice consists of a body and two projecting wings, all four stories high, substantially built and abundantly perforated with windows. The body is 210 feet long, in the central part 36 feet wide, in the end parts 24 feet. Each of the wings is 70 feet long and 24 ft. wide. The floors are distributed into wards, fitted up with ranges of beds capable of accommodating 228 patients.—*Heriot's Hospital*, situated on the summit of the south ridge of Edinburgh, and surrounded by a spacious area or open park, is a magnificent and even princely structure. The edifice was commenced in 1628, and finished in 1650, at the cost of £30,000. It is the finest and most regular of the specimens of Gothic architecture designed by Inigo Jones. It is a noble quadrangle, 162 feet each way in the exterior, having an open court measuring 94 feet each way in the centre. This hospital originated in a princely bequest of George Heriot, goldsmith, first on a small scale and in an humble way in Edinburgh, next to Anne of Denmark, consort of James, and afterwards to James VI. himself, both before and after his succession to the English crown. In April, 1659, it was opened for 30 boys; in 1753, for 130; and eventually for 180. Boys are admitted when from 7 to 10 years of age, and usually leave when about 14. They are comfortably lodged and fed, wear an uniform dress, and receive a very liberal education. The total revenue of this hospital now exceeds £14,000 per annum, of which £11,000 are *expended* in the hospital itself. In 1836 the governors obtained par-

HERIOT'S HOSPITAL.

liamentary sanction to extend the benefits of the institution in the erection of free-schools in various parts of the city; and seven schools have since been erected. The management of the hospital is vested in the Town Council, and the city ministers of the Establishment.—*George Watson's Hospital* stands 200 yards south of Heriot's Hospital, at the entrance to the meadows. This hospital originated in a bequest of £12,000 by George Watson, first a merchant in Holland, and afterwards an accountant in his native city, Edinburgh, who died in 1723. When the building was commenced, the fund had accumulated to £20,000. Originally twelve boys were admitted on the foundation, but now eighty, who wear an uniform dress, and are lodged, fed, educated, and provided for in a similar way to the boys of Heriot's Hospital.—The *Merchant Maiden Hospital* stands in the meadows, nearly 200 yards west of George Watson's Hospital. The edifice is Grecian, 180 feet long and 60 feet wide, and has in front a portico supported by four handsome pillars. It was built in 1816, at the cost of £12,250. The institution was founded in 1695. From 80 to 100 girls are maintained at one time on the foundation; they enter from 7 to 11 years of age, and depart at 17; and receive an education both substantial and ornamental.—The *Trades' Maiden Hospital* stands on the south side of Argyll-square, and is an edifice of plain exterior.—The *Orphan Hospital* a handsome edifice, built in 1833, at the cost of nearly £16,000, is situated at the north end of Dean-bridge, about 250 yards from Randolph-crescent. Orphans of both sexes are received from all parts of Scotland, and are maintained and educated to the number of about 150 at one time.—*John Watson's Hospital* is situated also near the north end of Dean-bridge, and was finished in 1828, after a design by Mr. Burn. The edifice is of Grecian architecture, large and showy, having in front a splendid portico and range of pillars. About 120 destitute children are maintained and educated,—admissible between 5 and 8 years of age, and dismissed when 14.—*Gillespie's Hospital* is salubriously situated in an extensive park at the head of the Town-links, near the south-west extremity of the Old Town. The edifice is a commodious oblong structure, partly in a castellated form. The establishment is fitted up for the accommodation and support of persons of both sexes, not under 50 years of age, who have sunk from wealth or competence to destitution, and admits at one time about 50. In its

vicinity is a school, opened in 1803, for the education of about 150 boys, who are admissible from 6 to 12 years of age, and are allowed to attend three years.—*Donaldson's Hospital* (a view of which is given at the commencement of our article upon Edinburgh), on the north side of the north road to Glasgow, a few hundred yards to the west of the west extremity of the city, is a magnificent pile in the Elizabethan style, 258 feet by 207 feet, surrounding an interior quadrangle 170 feet by 164 feet. The corridors and passages, which are carried along the entire sides of the building, are between 3,000 and 4,000 feet in length. The average height of the apartments on the principal floor is 17 feet, and the building contains 164 apartments. The late James Donaldson, Esq., of Broughton Hall, printer and proprietor of the "Edinburgh Advertiser" newspaper, bequeathed the princely sum of £200,000 to certain trustees, for the endowment and creation of an hospital for the maintenance of 150 poor boys and 150 poor girls, if they are found deserving, the first claim to this bounty being by children of the name of Donaldson, after the founder, and Marshall, after his mother's name. From the amount of property left, provision is making for accommodating 50 additional boys and 50 girls. The age of admission is from 6 to 9 years of age, and that of dismission 14 years of age.—*Stewart's Hospital*, the most recently erected of this class of institutions in Edinburgh, overlooks the Queensferry-road. It is a quadrangular building, extending from east to west about 230 feet. It has an open court, with a screen and gate-houses in the centre, and two main towers which rise from the angles of the court to a height of 120 feet. It is to be appropriated to the education and board of boys.

Close by the grand old Castle rock, rich in the story of six centuries —in the steep lane which leads from the residence of the author of "The Gentle Shepherd" into the picturesque High-street, with its wondrous many-gabled houses quaintly ornamented with the fleur-de-lis, thistle, and rose, and in a neat plain stone building, the eloquent divine, Dr. Guthrie, has planted his Ragged-school. Now, though it is true that a benevolent cobbler originated the idea, and that Sheriff Watson of Aberdeen (to whom too much honour can hardly be given) was the leader in this great enterprise, it is Dr. Guthrie who has *popularized* the "unwholesome" subject, and has thrown such a

"glamour" over it, that wherever the magic eloquence of his tongue and pen have reached, his name and that of ragged-schools are almost convertible terms. And, indeed, quite apart from the practical benevolence which established the schools, and the unwearied perseverance which has toiled for their support for fourteen years, it is no small achievement to have thrown such a poetry over dirt and rags as to prevent them from offending the instincts even of the most fastidious.

STATUES.—In the centre of Parliament-square is an equestrian statue of Charles II., erected in 1685, at the cost of £1,000, which, in vigour of design and general effect, surpasses any other specimen of bronze statuary in Edinburgh. On the north side of the Castle-hill, or esplanade of the Castle, is a splendid bronze statue of the Duke of York, placed on a pedestal, and erected in 1839. Looking up St. David's-street, within the screen along the south side of Prince's-street, is Sir Walter Scott's monument. The design, by G. M. Kemp, combines the beauties of the most admired specimens of the monumental cross. It covers an area of 55 feet square, and rises to the height of 180 feet. The statue, by Mr. Steel, is appreciable for its beauty as a work of art, and for its correctly imaginal representation of Sir Walter; and is canopied by a grove roof copied from the compartment, still entire, of the roof of Melrose choir. In George-street, at the point of its intersection by Frederick-street, is a bronze statue of Pitt, executed by Chantrey, and erected in 1833. The statue is placed on a pedestal, and possesses considerable dignity of expression. In George-street, at the point of its intersection by Hanover-street, is a bronze statue of George IV., executed by Chantrey, and erected in 1832. This monument is utterly inferior to that of Pitt, by the same artist. In the centre of St. Andrew's-square, at the east end of George-street, stands Lord Melville's monument, a remarkably handsome column, rising to the height of 136 feet, and is then surmounted by a statue 14 feet high. The design is, in general, a copy of the Trajan column in Rome; but deviates from that model in the shaft being fluted instead of ornamentally sculptured, and in the pedestal being a square instead of a sphere. The column is 12 feet 2 inches thick at the bottom, and gradually diminishes in its ascent till it is 10½ feet thick at the top. In front of the Royal Bank in St. Andrew's-square

is a statue, in Roman costume, of the Earl of Hopetoun, erected in 1885. The Earl leans on a charger pawing the pedestal, and is eulogised in inscriptions commemorative of his military exploits. East of Bridewell, on the same side of the road, standing on an isolated eminence, is Burns' monument. A fine statue of the poet by Flaxman, which was originally placed in this structure, has been removed to the College library.

MONUMENT TO SIR WALTER SCOTT, EDINBURGH.
(From a photograph by Lennie.)

ECCLESIASTICAL EDIFICES.—*Canongate Church*, situated on the north side of the Canongate, several yards back from the street line, has a cruciform shape, with nave, transepts, and chancel.—Trinity College

Church, situated on the west side of the foot of Leith-wynd, on the low ground between the Old and the New Town, dated as high as about 1470, was never completed, and consisted of only the choir, central tower, and transepts of the designed erection. This building has recently been removed, for the better accommodation of the North British Railway; but the stones have been carefully numbered and laid aside, with the view of re-erecting the edifice on some other locality. —The *Tron Church* stands isolatedly at the intersection of High-street and South Bridge-street. The square tower was originally surmounted by a wooden spire covered with lead; but this having been wholly destroyed by the falling of embers upon it in the great fire of 1824, the tower was decorated and carried aloft with a handsome spire of stone. —*St. Giles' Church*, the most ancient existing ecclesiastical edifice in Edinburgh, but of unknown or uncertain date, is situated on the north side of Parliament-square, separating the area of that square from High-street. Previous to 1830, during which year and the two following years it was greatly altered within and rebuilt in its facings without, it was of the cathedral or cruciform shape, Gothic, but irregular in its architectural adornments, and undistinguished by the beauty of decoration and the symmetry of proportion found in many edifices of its age and class. Its length was 206 feet, and its breadth, at the west end, 110 feet, at the middle, 129, and at the east end, 76. From the centre rises a square tower, decorated at the top with open-figured stone-work, and sending off from its angles four arches, which have pinnacles in their progress and a small spire at their point of meeting, and produce the figure of an ornamented imperial crown. This figure rises 161 feet above the base of the edifice, and occupying a high and commanding site is seen from a great distance, and forms one of the most characteristic features of the city landscapes of Edinburgh. St. Giles is first mentioned in 1359. In 1446 it was made a collegiate church. After the Reformation it was partitioned into four churches and some lesser apartments. In 1643 the Solemn League and Covenant was sworn and subscribed within the walls of St. Giles by the representatives of the public bodies of Scotland. The recent changes, aided by a government grant of £10,000, and effected after a design by Mr. Burn, have given the exterior a very creditable appearance. The High Church is understood to be attended by the magistrates of the city, the judges

of the Court of Session, and the barons of Exchequer; and owing probably to this circumstance—though on a strictly ecclesiastical or presbyterial level with the other parish churches of the country—it holds a place in popular estimation, and invests its ministers with a species of influence, as the metropolitan church of Scotland.—*Greyfriars' Church*, old and new, situated in a recess from Candlemaker-

SKETCH IN GREYFRIARS' CHURCHYARD.
(*From a photograph by Lennie.*)

row, immediately north of the city poor house, was, previous to its recent destruction by fire, externally a plain, slated, oblong structure, with Gothic windows, and internally a place of Gothic construction, with heavy pillars and arches. One-half of this edifice is still employed as a place of worship. Its cemetery, though embellished with few monuments of architectural or sculptural merit, contains the ashes of many distinguished Scottish characters. A new and handsome church, in the Norman style, has been erected in the vicinity of the old edifice, for the use of the congregation.—The *New North Free Church*, in the vicinity of the Greyfriars' Church, is a very handsome Gothic edifice.—*Newington Church*, situated on the west side of Clerk-street, has a Grecian front, and a spire 110 feet high. The building is 162 feet long and 73 feet wide; and chaste, though not showy in

appearance, is principally remarkable for its being the first public edifice which meets a stranger's eye on the thoroughfare to the west of England and central part of the south of Scotland.—*Nicolson-street Chapel*, belonging to the United Presbyterian Church, presents to the street a showy Gothic front, with pinnacles rising 90 feet above street-level.—*St. Cuthbert's Church*, situated in the hollow under the north-west face of the Castle, a little inward from the angle of Prince's-street and Lothian-road, is a huge, plain edifice, with a double-slated roof. The original St. Cuthbert's Church is older than Scottish record, perhaps as old as the age succeeding the demise of St. Cuthbert, the end of the seventh century.—Near to the Caledonian Station is the beautiful Sinclair Fountain, executed at the cost of Miss Sinclair, and erected in Jan., 1860. It is surrounded by four lamps, and is upon the whole an unusually pretty object.—*St. John's Episcopal Chapel*, situated a few yards north of St. Cuthbert's, in the angle formed by the intersection of Prince's-street and Lothian-road, is the most splendid ecclesiastical structure in Edinburgh, embellished within and without with all the graces of the florid Gothic order. The building is 113 feet long and 62 feet wide. On both sides are buttresses, the summits of which and of the inner wall are adorned with pinnacles. From the west end rises a square tower, perforated at the base with the main entrance, relieved in its sides by beautiful windows, and terminating at its summit, 120 feet high, in ornamented pinnacles. The pillars and arches of the interior are light and symmetrical, and the middle

ST. JOHN'S EPISCOPAL CHAPEL, EDINBURGH.

roof is ornamented with mouldings and a profusion of decorations. A beautiful stained-glass window over the communion table was erected five years ago. This chapel, being the scene of episcopal ordinations, is viewed in the light of a cathedral.—*St. Patrick's Chapel*, belonging to the Roman Catholics, and situated in Lothian-road, is a showy Gothic edifice.—*St. George's Church*, situated on the north side of Charlotte-square, denounced by some critics as shapeless and insufferably dull, and panegyrized by others as the most handsome place of worship belonging to the Scottish Establishment, is a square edifice in a massive Grecian style. Its front, 112 feet in length, presents to the eye a lofty portico, supported by four pillars and two pilasters of the Ionic order. From the summit rises a circular tower, surmounted by a lead-covered dome, to the height of 150 feet.—*St. Andrew's Church*, situated on the north side of George-street, is of an oval form. Its front gives to the view a portico resting on four remarkably elegant Corinthian pillars, and surmounted by a spire which tapers aloft to the height of 168 feet. The spire is one of the most beautiful in the sky-line of any city.—*St. Stephen's Church*, at the end of Fettes-row, fronting the line of St. Vincent-street, is of an order of architecture called the Mixed Roman. From an obtuse angle in front rises a massive tower, 163 feet high, terminated by a balustrade; and from each angle of the balustrade springs an elegant double cross. But whatever attractions to the taste, or challenges to criticism, the edifice offers to view, are in a great measure marred by the lowness of its situation.—*St. Mary's Church*, situated in the centre of Bellevue-crescent, is of an oblong form, having one of the shorter ends as its front. A range of elegant Corinthian pillars supports a pediment, and bears aloft a high spire of considerable beauty.—The *United Presbyterian Church*, Broughton-place, is in the Grecian style, and has a beautiful portico supported by a range of Doric columns.—The *Roman Catholic Chapel*, Broughton-street, presents to the view a Gothic gable, with buttresses and pinnacles, winged by side-pieces of kindred architecture. The building is 110 feet long and 57 wide within walls, and lifts the pinnacles of its front to the height of 70 feet.—*St. Paul's Episcopal Chapel*, situated on the south side of York-place, in the angle formed by it and Broughton-street, consists, like St. John's, of a main body and side buttresses, measuring in all 120

feet long and 73 feet wide. From each of the four angles of the inner walls rises a small circular turret of open stone-work; and surmounting the outer buttresses are symmetrical pinnacles. In Albany-street there is a new Free Church in course of erection, the spire of which is very fine.

Civil and Ecclesiastical Courts.—Edinburgh is distinguished as the seat of a complete establishment for the administration of justice. The *Court of Session* is the supreme civil court of Scotland; a court both of law and of equity, and possessing discretionary power. In fact, the business of this court comprises all that in England occupies the Court of Chancery, the Vice-Chancellor and Master of the Rolls, the Courts of Queen's Bench, and of Common Pleas, and Exchequer; the Court of Admiralty, the Court of Doctors' Commons, and the Court of Bankruptcy. This court at present consists of thirteen judges. The lord president and three senior puisne judges form what is termed the First Division of the court; the lord justice clerk and three senior puisne judges form what is termed the Second Division of the court; and these two divisions are termed the Inner House. The remaining five puisne judges officiate in what is called the Outer House, as lords ordinary, each sitting singly. The great majority of cases—all cases, indeed, with a few exceptions not worth mentioning here—are brought, in the first instance, and in their earliest stage, before one or other of the lords ordinary; the record is made up before him and under his superintendence, and the case prepared for decision. It is then argued before him, and in general decided by him. From his judgment there lies an appeal to the Inner House, in one or other of its divisions. The judgment of the division is final, subject only to appeal to the House of Lords. There is no appeal from one division to the other, nor from one division to the whole court; but either division may require the opinion of the other judges, in which case judgment is given according to the opinion of the majority of the whole court.—The *Court of Exchequer* still remains as a separate jurisdiction, but its judicial business is now discharged by two judges of the Court of Session, sitting as barons of Exchequer. A more important duty, and one of great labour and responsibility, devolves upon the lord president, as lord justice general, and the lord justice clerk, and five puisne judges of the Court of Session, under a separate

commission, by which there is conferred upon them supreme criminal jurisdiction.—The *Court of Justiciary* sits as occasion requires, in Edinburgh, for despatch of business, embracing there the criminal business of the three Lothians, with such cases as, from their importance or other reason, are brought to Edinburgh for trial. In each year, during the vacations of the Court of Session, there are three spring circuits and three autumn circuits, with an additional winter circuit for Glasgow.—The *Faculty of Advocates* consists of between 400 and 500 barristers, who have the privilege of pleading before the supreme courts. Their affairs are presided over by a dean, and managed by a council, a treasurer, and a clerk, and are subject to the authority of the Court of Session. Members of the faculty alone are eligible to the judgeships of the Court of Session, the sheriffships of the Scottish counties, and several important offices and dignities connected with the Government.—The *Faculty of Writers to the Signet* includes from 600 to 700 individuals, who are entitled to act in the supreme courts, and have the sole right of making documents valid by the signet or seal of Her Majesty. They were originally and literally clerks in the Secretary of State's office.—The *Commissary Court*, or head consistorial court of Scotland, was, as to its business, nearly all merged in the Court of Session in 1830.—The *Sheriff Courts* of the county are held in Edinburgh, but are not different from those of other counties.—The *Convention of Royal Burghs*, a court constituted in the reign of James III., meets annually in Edinburgh, and is presided over by the lord provost of the city.—The *General Assembly of the Church of Scotland* holds a full meeting annually in May, besides several meetings of its Commission. A presbytery of fewer than thirteen parishes delegates to it two ministers and one elder; a presbytery of fewer than nineteen, but more than twelve, delegates three ministers and one elder; a presbytery of fewer than twenty-five, but more than eighteen, delegates four ministers and two elders; a presbytery of fewer than thirty-one, but more than twenty-four, delegates five ministers and two elders; and a presbytery of more than thirty, delegates six ministers and three elders. Each royal burgh sends one member; Edinburgh sends two; and each university sends one. The Assembly has an ecclesiastical president or moderator, elected by the votes of its members, and a civil president, or overseer, the repre-

sentative of Her Majesty, or, as he is called, the Lord High Commissioner, appointed by the Crown. The *Commission of the Assembly* consists of a large portion of its members, who are invested with all its ecclesiastical powers to despatch business which cannot be overtaken during the ten days of its full session, and to watch over the interests of the church throughout the country. Edinburgh is the seat of a bishop of the Scottish Episcopal Church; it is the residence, also, of a Roman Catholic bishop.

Municipal Government, etc.—The city of Edinburgh is governed by a lord provost, magistrates, and council, who are elected according to the provisions of the Burgh Reform Act. The lord provost is styled "right honourable," is *ex-officio* high sheriff of the royalty, and has precedence of all official persons within his jurisdiction. The magistracy consists of a lord provost, a dean of guild, a treasurer, and four bailies, each of whom is *ex-officio* a member of the council. The number of councillors is thirty-three. For the purposes of the election the city is divided into wards or districts. The number of municipal electors in 1839 was 3,059; in 1848, 6,462. One third part of the councillors go out of office every year, but are eligible for re-election. The provost, bailies, treasurer, and other office-bearers, are elected by the councillors. The provost's term of office is three years, and he is eligible for immediate re-election. The patronage of the town council is very extensive and valuable. The city having become insolvent in June, 1833, a statute was passed in August, 1833, conveying its whole properties and revenues, so far as legally liable for its debts, and attachable by the diligence of its creditors, to trustees. This conveyance does not include the harbour of Leith. At that period, the whole heritable and moveable property of the city, exclusive of the Leith dues, and of the value of the High School, the council chambers, the court rooms at Leith, and the church patronage, amounted in value to £271,657, and the debt to £407,181. The revenue, exclusive of the Leith dues, was £16,260. The total corporation revenue, in 1840-41, was £27,046; in 1843-4, £22,787; at present it is about £25,000.

Canals and Railways.—The facilities of communication which Edinburgh enjoys by sea, as well as its modes of communication with Fife and the north-east of Scotland, are numerous. Its land communications by coach, wagon, and cart, are too many and minute to

bear even an attempt at enumeration. The Union Canal and the railways, however, are so important to the city, and so immediately connected with it, as to demand a moment's attention. In 1817 an Act of Parliament was obtained, giving power to a joint-stock company to cut a canal from Edinburgh to the Forth and Clyde Canal, at a point about four miles before the latter's communication with the Forth. The canal was begun in the same year, and completed in 1822. The chief objects of it were the transmission of heavy goods and the conveyance of passengers between Edinburgh and Glasgow, the importation to Edinburgh of large supplies of coal from places to the west, and the exportation of the manure of the city. The east termination, called Port Hopetoun, is on a plain, half a mile south-west of the castle, and has occasioned the erection around it of an important suburb. The canal, though a great benefit to the town, has drained heavy losses from the shareholders. The great line of railway between Edinburgh and Glasgow began to be cut in 1839. The Leith, Granton, and Newhaven Railway commences at the new terminus of the Edinburgh and Glasgow Railway, at the east end of the Prince's-street gardens, and proceeds, by a tunnel, under the north ridge of the city to the foot of Scotland-street, and thence to Trinity Suspension Pier, in nearly a straight line. The whole length of the railway to Trinity is 13,000 feet, or 2½ miles; that of the tunnel, opening at Canonmills, about 2,800 feet. Immediately after crossing the water of Leith, it sends off a branch to the harbour and docks of Leith; and another branch, or rather an extension of the line, proceeds from Newhaven to Granton. From Granton Pier the line of communication is continued northwards by the ferry to Burntisland, and thence by railway to Perth. The North British Railway places the Edinburgh and Glasgow Railway in connexion with the Berwick and Newcastle, and thus completes the railway communication with London. It proceeds along the east coast by Dunbar, sends off branches to Haddington and to North Berwick, and is 59 miles in length. The Edinburgh and Hawick Railway, a prolongation of the Dalkeith Railway, is 45 miles 28 chains in length. By the Caledonian Railway, also, Edinburgh is placed in connexion with Carlisle, by a line traversing the central districts of the south of Scotland, by Lanark, Moffat, Lockerby, and Ecclefechan, which we have described *en route*.

COMMERCIAL ASPECT OF EDINBURGH.

The general manufactures of Edinburgh are few. The making of shawls and plaids, composed of silk and wool, of very rich designs and excellent quality, was for a time the chief.

Edinburgh is, however, distinguished as a mart of literature, and its inhabitants enjoy a deserved reputation for cultivated tastes and habits. Sydney Smith's witty motto to the first number of the Edinburgh Review, "We cultivate literature on a little oatmeal," has continued to hold good, albeit the food has been exchanged for something more generous and acceptable. This reputation, however, is not of much older date than the latter part of the eighteenth century. Thirty years after Caxton had set up his press at Westminster, Walter Chapman and Andro Myllar, by a royal privilege of James IV., granted in 1507, established here the first printing-press in Scotland. Ruddiman, the well-known author of the "Rudiments of the Latin Tongue," and also Allan Ramsay, contributed no small share in the maintaining of a character for excellence in their several departments of literature; but the person to whom Edin-

burgh is most indebted for an increase of its reputation is Sir Walter Scott; while David Hume, Lord Kaimes, Lord Hailes, Dr. Robertson, Hugh Blair, Adam Ferguson, Professor Playfair, Thomas Brown, Dugald Stewart, Henry Mackenzie, Sir James Mackintosh, Sir Charles Bell, Dr. Chalmers, Patrick Fraser Tytler, Francis Jeffery, D. M. Moir, John Wilson, and many others, render Edinburgh proudly pre-eminent in the various walks of science and general learning. At the present time, a far larger proportion of literary persons, and operatives connected with literature, are employed in Edinburgh than in any other town of the three kingdoms except London.

Edinburgh cannot be called a place of much trade or manufacture, being chiefly supported by persons in the law and medical professions, especially the former. But the great bulk of the inhabitants are not engaged in productive industry. There are numerous manufactures, it is true, but almost all are on an inconsiderable scale, and conducted without the limits of the city. There are several distilleries in the suburbs and vicinity, where great quantities of spirits are produced. Large breweries are established for different kinds of malt liquor, some of which are exported to London, Liverpool, &c. One of these, the Abbey Brewery, will be found described at page 217. Sugars are refined, though not in quantities; and soap and candles are made. The preference given to English broadcloth renders the woollen manufacture languid; and from the extensive manufactures of Glasgow and Paisley supplying the capital with cotton goods, they cannot be fabricated here equally cheap. But the linen manufacture is good, and that of silks and sarcenets is daily gaining ground. Quantities of silk stockings are made and sent to England for dyeing. The tanning of hides is a large branch of manufacture. Household furniture is made in quantities for home use and export; and there are several manufactories of cart and carriage wheels, agricultural implements, and mill machinery. The fabrication of musical instruments has much increased of late. There are several iron and brass foundries. Near Edinburgh is an extensive manufactory of cotton cords. The articles mostly dealt in by tradesmen are silver and plated goods; jewellery and cutlery; leather, cloths, silks, linens, stockings, groceries, books and paper; wines and spirits, &c. &c.

Edinburgh, as to water, coals, facilities of communication, and relative position, is peculiarly well situated for manufactures; but

OFFICES OF THE LIFE ASSOCIATION OF

hitherto it has expended its physical advantages chiefly in promoting the health and comfort of its inhabitants. Such trade as it has is carried on principally through Leith.

Among the most prominent commercial edifices of Edinburgh, we may notice the buildings erected within the last twenty years by the Banks and Life Assurance Companies. Several of these are of very elegant and imposing designs, and constitute some of the principal architectural ornaments of this remarkably fine city. In the previous page, we have given a representation of the office of the Life Association of Scotland, for Assurances and Annuities. It occupies the best position in Prince's-street, the handsomest street in Edinburgh, as well as the centre of all business.

Scotland is celebrated not only for its banking system, but also for its sound and successful Life* Assurance Institutions. England produces, every year, many new Assurance Companies, not a few of which, from mismanagement or instability, as rapidly sink out of sight. In Scotland, on the other hand, there are only thirteen Life Offices, none of which are of less standing than eighteen years; and not only has there been no failure to meet obligations, but all of them have dispensed benefits to their assured far exceeding what they undertook. The consequence is, that the Scotch Life Offices enjoy a high standing and reputation. But not only have the Directors of these institutions exercised the prudence and due caution characteristic of Scotchmen, but they have conducted their affairs also with conspicuous liberality and enterprise. Many of their rules give privileges to the assured that cannot be obtained from any of the English Companies; and not content with the narrow field of Scotland, they have spread their branches over England and Ireland, and some have extended themselves even into Canada and the other colonies. In England, especially, the Scotch Life Offices have met with peculiar favour and success; several transacting, in England alone, an annual business equal to that of the largest of the English Companies.

Some idea of the magnitude of the interests involved in the Scotch Life Offices may be obtained from the amount of their income and funds. Their aggregate annual income is returned at over Two

* Very few of the Scotch Assurance Companies transact also Fire Assurances.

THE TELLERS' ROOM, LIFE ASSOCIATION OF SCOTLAND.

Millions sterling, and their realized and invested funds amount to upwards of Eleven Millions. And it will be difficult to over-estimate the benefits they confer on the community, not only in providing for the widow and the orphan, but also in gathering together, from innumerable sources, small sums that would otherwise go to waste or lie idle, and in investing them where they yield an increase from interest, and assist the merchant to extend his business, and the agriculturist to improve his fields.

The building shown in our engraving was completed for the Life Association of Scotland, from the designs of the late Sir Charles Barry, the well-known architect of the Houses of Parliament at Westminster, assisted by Mr. Rhind, of Edinburgh. It is in the style of the Venetian Rénaissance period. Although, like the most of Sir Charles Barry's productions, it is highly, but beautifully, ornamented,—perhaps too much so for business premises,—yet the effect of the whole is striking as well as pleasing. As the Association required only a portion of the building, it was necessary to adapt the remainder for being let as offices. This has been satisfactorily accomplished by the architects, without materially affecting the design; and we believe the rents obtained from the tenants are very remunerative. The Life Association possesses thus most commodious offices at a comparatively small cost.

We believe we are correct in stating that Sir Charles Barry was indebted for many of the admirable arrangements shown in the general construction, as well as in the exquisite ornamentation and taste displayed, to the manager of the company, Mr. Fraser. Entering the building, the offices and manager's rooms are on the right; the tellers' room, 63 feet by 26 feet, and 27 feet high, is immediately before us; and on our left the magnificent staircase leading to the Board-room, auditors', medical departments, &c. Beneath, is the enormous basement, with its strong rooms, splendid heating-apparatus, &c. The large fire-proof rooms for the ledgers, &c. &c., are behind the tellers' room, while the bonds, policies, &c., are stored in the enormous safe in the manager's room. The decorations throughout, are exceedingly chaste and beautiful; nor must we omit to mention the magnificent lamps at the entrance.

The Life Association of Scotland was established in 1838; and,

from very small beginnings, has now attained to a position and extent of business equal to those of any Life Office in the kingdom. Founded originally on the model of the London Life Association, it now, we believe, far exceeds that office in the extent of its transactions. The business in England and Ireland is transacted at London and Dublin respectively, under the charge of separate Boards of Directors. The Association has also branches in Canada, Nova Scotia, and New Brunswick.

The mode in which the profits of the Association are divided is well adapted for persons having fixed incomes, whose household or other expenditure is likely, in a few years, to increase. It is also well suited to the merchant, who, although bound to protect his family by assurance, yet should withdraw as little as possible for that purpose from his business capital. But, in order still further to meet the case of those who desire to protect their families by an assurance, and yet to withdraw from their present means the smallest possible sum for that purpose, the Directors lately adopted a regulation which enables many persons to avail themselves of life assurance, who could not conveniently do so in the ordinary mode. By this arrangement, called the "half-credit system," an assurance for £500 or upwards may be effected and kept in force, by payment of only one-half of the first six years' premiums. The unpaid half-premiums are allowed to remain (without security) in the hands of the assured so long as he pleases; and if not paid before death, the amount will be deducted from the sum assured. In the event of death, the full sum assured (after deduction of the unpaid half-premiums) will be paid by the Association. The principal advantage of the system is the small outlay required; for example,—an assurance, with profits, for £250, on the ordinary system, on a life of thirty-one, requires a payment, the first year, of £6 7*s.* 6*d.*; while, under the half-credit system, that sum, together with 6*s.* 5*d.* of interest, will assure £500. The policies of the Association do not contain several of the restrictions commonly imposed on assured lives, but confer on the policy-holders unusual privileges. The assured are allowed, without extra charge, to reside in Europe; in British North America and the United States, not farther south or west than the Virginia, Kentucky, or Missouri States; also at the Cape of Good Hope, in Tasmania, and in New Zealand. Policies will not be

forfeited by the assured transgressing the limits of occupation or residence, if held by any onerous third party, ignorant of the circumstance, who shall pay the necessary extra premium as soon as the circumstance comes to his knowledge. After the policy has endured for five years, and the age has been admitted, the policy shall be indisputable. If death occur during the twenty-one days allowed for payment of a premium, and the premium be unpaid, the sum assured will be paid, after deduction of the premium and interest thereon. If, during the first five years, no extra premium has been incurred for foreign residence or hazardous occupation, then, in the majority of cases, the Directors will, on application, issue a certificate of exemption from all restriction on residence or occupation. After five years, if the full premiums have been paid, then the policies shall *not be forfeited* by non-payment of the premium within the twenty-one days allowed for the purpose; but they shall remain in force, even in the event of death, provided payment be made within one year, with a fine of two and a half per cent. per month. The policies of the Association are thus rendered more valuable as provisions under marriage settlements, as securities for money, and for every other purpose, than the policies of most other Assurance Offices.

Messrs. James Milne and Son, Brass Founders, Gas Metre and Gas Apparatus Manufacturers, Milton House, London Offices, Bridge-street, Blackfriars.

A business that has borne the test of a century and a half requires but few comments on its well-sustained reputation. The premises extend from Canongate to South Bank; the number of persons employed are about 300, and the manufacturing operations are on a very large scale. Part of the Works are permeated by a rail, or tram. Lofty chimneys raise their columns to a great height, indicating the locality of the Works

The Gas Metre Shop, where these valuable and ingenious instruments of measurement are made, is a curiosity in its way which will gratify the spectator. Most of us are accustomed to the use of a gas-metre, but few persons are acquainted with its mechanism. When gas commenced to be extensively used, it was found necessary to have some check upon the gas-works, as well as the public, as a means of calcu-

VIEW OF THE INTERIOR OF THE PREMISES OF MESSRS. JAMES MILNE AND SON.

lating between the works and large consumers, and indicating accurately the quantity consumed. This has been to a great extent accomplished by the gas-clock or gas-metre. The principle in the construction is simple. When a number of vessels of a certain capacity—say one cubic foot—are so arranged that (without loss of gas in the interval) one after the other shall be filled by the gas in passing, and for this purpose are inverted in water, into which the gas enters, just as it is the case, on a large scale, with the gasometer; it follows, that just as many cubic feet of gas will have passed, as there are air-vessels that have filled. If these vessels be attached to a common axis, upon which they revolve as they fill and rise, every revolution will correspond with four cubic feet of gas that have passed through. In the actual gas-metre, instead of separate vessels, compartments of a drum of equal and known capacity are used. The drum revolves in a case more than half filled with water, and is divided by four crooked partitions into as many chambers. The contents of each chamber are closed at the front and back by the straight sides of the drum above, by the crooked partition, and below by the water. The tube for the admission of the gas enters at the back, and delivers into the uppermost box: as this fills it becomes lighter, and rising, revolves on its axis until it gets above the level of the water, when it parts with the gas through a narrow slit into the space above, when the gas is carried on into the consuming-pipe. The moment one chamber is emptied, another is filled with water, and placed above the pipe, which enters from the back; it becomes filled, and acts similarly to the first, and so on with the four. To the axis of the drum is attached a tooth-wheel, which turns a hand by means of works upon a clock-plate with dials, and thus the quantity of gas which is passed is ascertained in cubic feet.

Part of the large Gas Metre Shop of Messrs. Milne and Son is devoted to Index-Making. Ascending from this department a few steps, we enter the Lighthouse Reflector Shops, an exceedingly interesting branch of this large business, and which a want of space prevents us from describing. The Brass Finishing and Engineers' Shop has an iron roof, and is 150 feet long by 70 feet broad. A large number of lathes, planing, and other machines, are in operation here. Connected with this are large stores. The visitor will be shown the Brass Foundries, the Engine Rooms, the Pattern Shops, Lacquering Shops, and an immense

variety of valuable machinery. In the grounds are piles of well-seasoned timber, for making patterns; also gigantic cranes, forges, &c.

There are several departments for manufacturing Gas Fittings of every kind; also Packing Offices, and suitable buildings for miscellaneous works of various description.

The operations of this most respectable firm are of considerable magnitude, and will command the earnest attention of all those who are permitted to inspect the premises.

THE ABBEY BREWERY, THE PROPERTY OF MESSRS. WILLIAM YOUNGER AND CO.,

is situated in the parish of Cannon-gate, and in the immediate vicinity of Holyrood Palace. The fame of Edinburgh ale, (of which this firm are by far the largest makers,) is well known. This trade has been a steadily increasing one. The superiority of their ale is partly owing to the adoption of all mechanical and other improvements, and also to the chemical properties of the water, of which, by sinking to an immense depth, they get an abundant supply. Professor Dr. George Wilson and Dr. Maclagan, having made several analyses of the water, found it free from colour, taste, and odour, and after having subjected it to the most rigid chemical tests, scarcely discovered a single trace of organic matter. Its most abundant properties are carbonate of lime and magnesia, sulphate of lime and soda, and chloride of sodium. Messrs. Y. and Co. *export their* ALES *to almost all parts of the world*, where they have established agencies, and to this branch of their trade extensive premises are entirely devoted, situated at a short distance from their Brewery. They have, besides, large maltings in other parts of the city. The Pale, or India Ale, so strongly recommended by the medical faculty, is extensively brewed here, precisely on the same principles as at Burton; and, as it is rising daily in reputation, this ale has every likelihood, also, of gaining a world-wide fame.

The business was established in 1749. The present proprietors are William and Henry Younger, and Andrew Smith, Esquires; Mr. A. Thomson is the head brewer, being assisted in his labours by his son, Mr. John Thomson.

These enormous premises are entered from the Horse-wynd. Passing through the large quadrangle, and under the bridge that connects

W.M. YOUNGER & Co.
INDIA ALE

"the maltings" and malt-bins, we ascend to the Mash-house, containing Steele's patent mashing apparatus, and two large mash-tubs, each holding 50 quarters, having above them the gigantic hopper.

We observe the two wort coppers, one holding 116 barrels, and also the liquor copper containing 220 barrels, and ascend to the great hop-stores, each containing 600 pockets of hops. We return to the Mash-house, and proceed to the tun and fermenting rooms, each having 30 fermenting tuns, and beneath them 12 settling synores.

The visitor who is permitted to inspect these premises should not fail to glance at Reiley's cooling apparatus. Returning to the quadrangle, we ascend to the large flats called "the maltings:" this department is very spacious. We finally return to the quadrangle, to inspect the two powerful centrifugal machines, one employed in drying the hops, the other for drying yeast. We are now close to the enormous stores or cellars, above which are the Vat-rooms. The firm are owners of the adjoining premises known as the CANNON MILLS, covering upwards of three acres of land; here are to be seen a convenient cooperage, large kilns, engine houses, &c. Here, too, are several saw-mills, hoop-bending and other machines. Nine large malt-houses are upon these premises. Upon the whole, we feel justified in saying that THE ABBEY BREWERY and the CANNON MILLS are, in all respects, admirably adapted for the large and continually increasing business of this very first-rate establishment.

A valuable class of manufactures is represented by

THE HOLYROOD GLASS WORKS, THE PROPERTY OF MR. JOHN FORD,

whose warehouses are 58, North Bridge-street, Edinburgh, and 136, Union-street, Aberdeen. These large depôts are filled with a beautiful collection of cut-glass ware, glass lustres, china and earthenware goods, Parian and alabaster figures, and an endless variety of other useful and ornamental objects.

The Holyrood Glass Works, situated south B. Canongate, Edinburgh, is the oldest and most extensive establishment in Scotland in the flint-glass trade. Goods in plain, moulded, and cut glass, there manufactured, are of the finest quality, commanding a large and continuous demand for home and foreign consumption.

One hundred and fifty men are constantly engaged in these works.

THE HOLYROOD GLASS WORKS, THE PROPERTY OF MR. JOHN FORD.

The ground covers more than two acres, and the steam employed is of 15-horse power. The process of glass-making we have explained in other portions of our Guide; it is, therefore, only necessary to briefly describe the premises under notice, for which purpose we visited them early in the present year. The MIXING-ROOM contains large sand pans, refining tanks to purify the pearl-ash, mixing chests, and quantities of barrels of the best red lead. The enormous GLASS-HOUSE contains eight "pots," and a magnificent annealing arch, ninety feet in length. From hence we passed into another GLASS-HOUSE with seven "pots;" and here we again observed, that every kind of machine necessary for operations of the latest, and most approved construction, was to be seen here. The "pots," or crucibles, are made upon the premises. Mr. Ford is a large manufacturer not only of the best "cut" glass, but also of every description of pressed and stamped glass. He exports to the Indies, and has a very large home trade, having a reputation for engraved glass, and lustre chandeliers. One of the warehouses is 400 feet in length, and the show-rooms are remarkably fine; but of the various departments, the CUTTING-SHOP, shown in our engraving, is the most striking; here we saw fifty men working at the same number of grinding and cutting wheels. This room is upwards of 400 feet in length, and contains, among other interesting objects, a curious revolving machine for cutting patterns *inside* globes.

The opal or opaque glass, relieved with burnished gold ornamentation, is a speciality of these works, and has been received with much commendation.

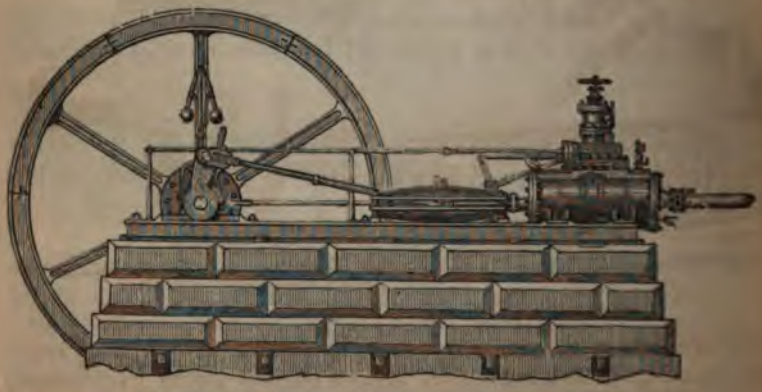
MESSRS. T. M. TENNANT AND CO., NEWINGTON WORKS, ENGINEERS MANUFACTURERS OF STEAM MACHINERY, AND IRON STRUCTURES GENERALLY.

The large establishments of Messrs. Tennant and Co. comprise the NEWINGTON WORKS, the IRON HOUSE and BOILER YARD at St. Leonard's, and extensive new Works building at Leith. These gentlemen are the largest manufacturers of steam-engines in Scotland, and every kind of steam machinery, both for home use and for the foreign markets, is made here. All the recent improvements in the mechanical

arts, in connexion with these objects, have been made available by these eminent manufacturers, and not only so as regards our own country, but, following the valuable information of their mechanical friends abroad, Messrs. T. M. Tennant and Co. have been enabled to adapt their work to the strict requirements of each particular country.

The increasing demand for steam power and relative machinery abroad, where skilled workmen, self-acting mechanical tools, and organized labour on a large scale are wanting, have given an impetus to the Works under notice, which must considerably advance their prosperity.

To describe the various articles, however valuable, manufactured at the Newington Works, would far exceed the limits to which our pages are confined; indeed, the ILLUSTRATED CATALOGUE of their productions, issued by Messrs. Tennant and Co., forms a complete book in itself, and is one of the most interesting, and best "got up" trade lists that we have seen. We can but allude to some of the most conspicuous of these articles:—Steam-engines, stationary and portable, for all purposes; small locomotives; pumping, mining, and sawing machinery; lifting cranes, steam, portable, and fixed; weighing machines; hydraulic and printing presses; water wheels, common and vortex; windmills; bark, sugar, flour, oil, rice, and bone mills; biscuit machinery; engineers' tools; lathes, planing, shaping, screwing, punch-



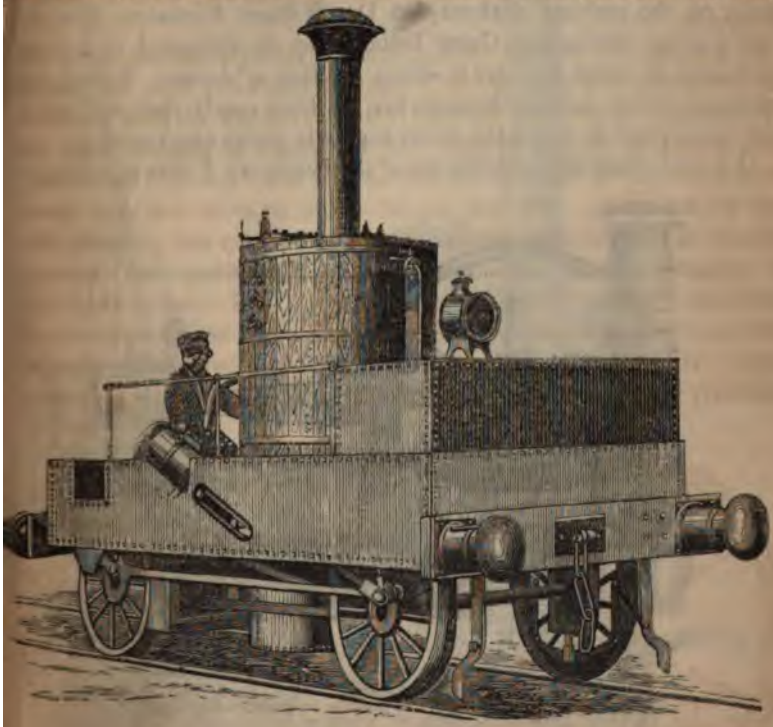
IMPROVED HIGH-PRESSURE HORIZONTAL STEAM-ENGINE.

ing, and drilling machines; agricultural implements in ploughs, harrows,

Tennant's patent grubbers, &c. &c. Iron stores, houses, markets, arcades, roofings, cast and wrought iron girders, bridges, piers, &c.

Our first illustration represents an IMPROVED HIGH-PRESSURE HORIZONTAL STEAM-ENGINE.

Their High-Pressure Horizontal Steam-Engines are in great demand, and form a leading article of manufacture. The smaller sized engines are sent out of the Works in a piece—fly-wheel and crank shaft alone disconnected. The engine is thus complete and ready for use, and can be fixed down to a foundation of wood, iron, or stone, at little expense,



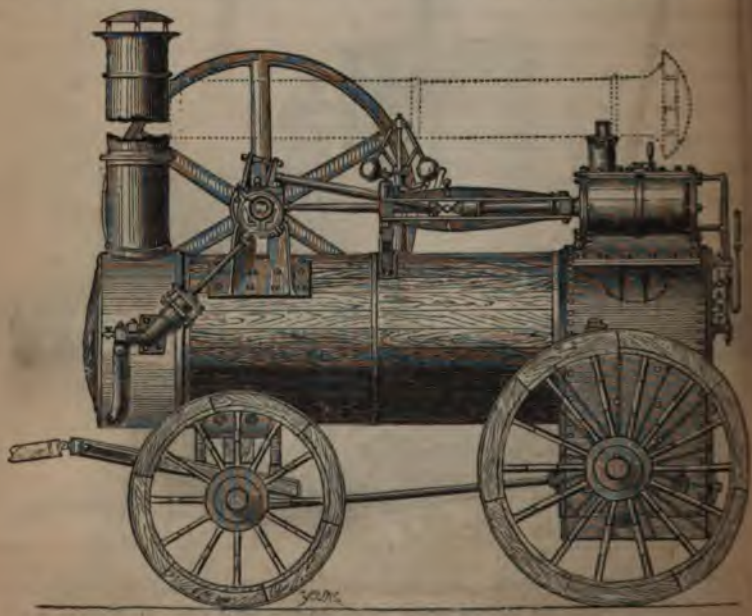
TANK LOCOMOTIVE.

by any ordinary workman. In engines for export, this plan is of very great advantage. The larger sized engines are sent out in pieces, each part carefully marked and numbered with a reference to the plan accompanying each *engine, showing* how they are joined together.

The boilers for these engines are made of large capacity in proportion to the powers of the engines, and are constructed with special reference to the kind of fuel to be used.

Our second illustration represents Messrs. Tennant and Co.'s TANK LOCOMOTIVE, of a simple and cheap construction, for use on short lines of railway. Any person surveying the varied resources for the employment of steam called into exercise at the Newington Works, cannot but marvel at the wonderful development of steam power throughout our great empire. Astonishment will be increased when we state, on the eminent authority of Dr. William Fairbairn, that the steam power throughout Great Britain may be estimated at a force equivalent in round numbers to *eleven millions of horses*. Taking one person to every nominal horse-power, we have nearly *four millions* of our countrymen to whom the steam-engine is giving employment.

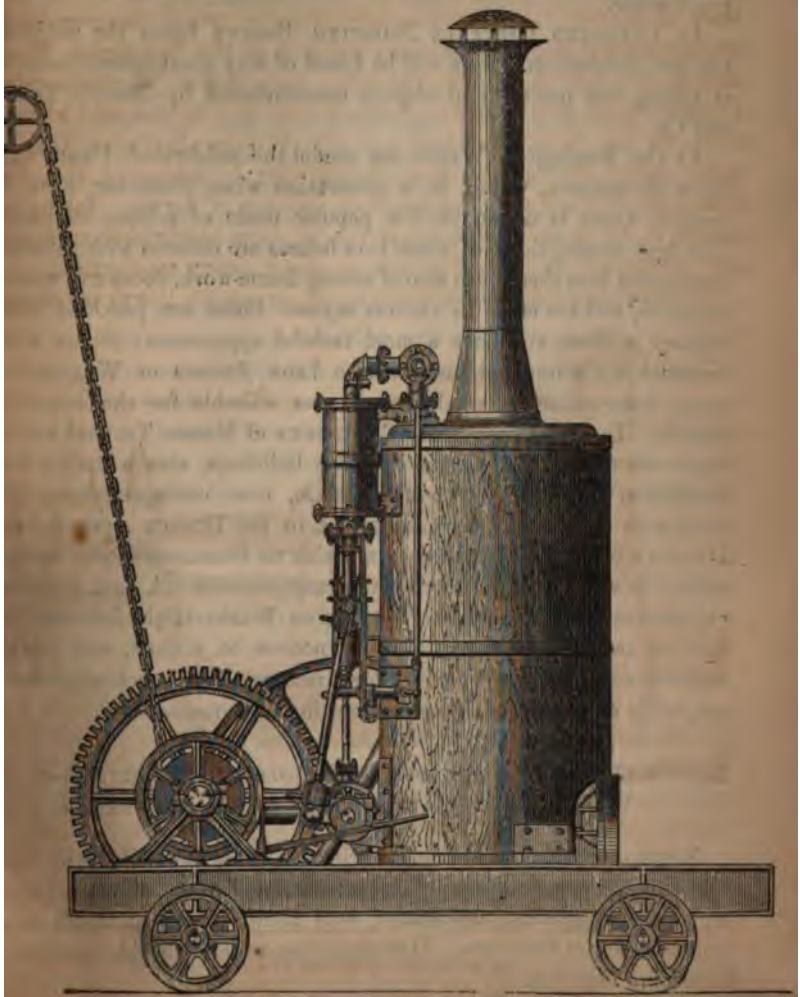
Our next illustration exhibits one of the IMPROVED PORTABLE STEAM-



IMPROVED PORTABLE STEAM-ENGINE.

ENGINES manufactured by Messrs. Tennant and Co. One great

provement in these engines, consists in the under part of the cylinder rming a steam-chest, from which dry steam is taken off directly to the lve case, without exposure to cold air in pipes, as in other engines; ile all danger from fracture by ice in the cylinder, in frosty weather, is



IMPROVED PORTABLE HOISTING ENGINE.

prevented. The boiler is covered with a casing of hair, felt, and wood, and over all is a covering of sheet iron, which will be found to be very durable and neat, and is easily kept clean. Each engine is furnished with a set of spanners, spare gauge-glass, oil tins, fire-irons, and a waterproof cover.

An Improved Portable Hoisting Engine forms the subject of our last illustration. This will be found of very great convenience, and is among the most useful objects manufactured by Messrs. Tennant and Co.

At the Newington Works are made the celebrated Corrugated Iron Buildings, which, in a generation wiser than our own, will become, there is no doubt, the popular mode of raising habitations. The best descriptions of these iron houses are covered with galvanised corrugated iron sheets, are also of strong frame-work, doors and windows complete, and are made in various styles. Some are provided with a balcony in front, and have a most tasteful appearance; others with a verandah all round; there are also Iron Stores or Warehouses, cheap descriptions of small iron houses, suitable for the country or seaside. In the Illustrated Catalogue of Messrs. Tennant and Co. there are several engravings of these buildings, also a design for an Exhibition Building or Crystal Palace, iron cottages, &c. These gentlemen possess an important patent in the Direct Acting Steam Hammer for crushing gold quartz, which no treasure-seeking emigrant should be without, especially as it is very portable. A vast number of objects manufactured at the Newington Works might be mentioned, but we are compelled to draw our notices to a close, not, however, without recommending our readers, interested in mechanical art, to see, while at Edinburgh, these interesting manufactories.

Messrs. John Taylor and Son, Upholsterers, Prince's-street Works, Rose Mount, Parish of St. Cuthbert's.

Nearly opposite the Castle, in Prince's-street, the visitor will remark the conspicuous premises of Messrs. John Taylor and Son, eminent upholsterers and cabinet-makers, well known to all amateurs of elegant and substantial furniture. Our engraving represents this spacious and handsome building.

The shop, or ground-floor, is full of Carpets, Office Tables, Tapestry

inges, Druggets, Oil-Cloth, Chintzes, and a host of other necessary rnishing articles, all of choice quality and newest design. From this rt of the premises we proceed to the Paper-Hanging Department, ere the visitor will be able to assure himself of the progress made in own and foreign manufactories, in these beautiful decorations for walls.

portion of the first floor of the building is devoted to the display ining Room and Hall furniture. Here will be found a sufficient ety to satisfy the most capricious taste: forms, antique or modern, e, substantial, light, and elegant; all shapes and sizes; manufactured he best seasoned wood, and finished with a nicety that could not be assed by any firm. In our way to this apartment we traverse a gallery filled with Wardrobes. Other portions of the premises are d with Bedroom Furniture, and those very great improvements n the cumbrous wooden four-posters of other days—Iron Bedsteads, ll descriptions, ranging from the rich and ornamental, fit for a ce, to the unostentatious but equally serviceable article, for sensible ple with moderate means.

The Works, where all these articles of furniture derive "their birth parentage," are situated in Gardiner's-crescent, Rose Mount, in parish of St. Cuthbert's. Here the visitor may become practically uainted with the mysteries of the cabinet-making craft; and if he sesses any taste for turning, or for any part of carpentry, he will to what perfection machinery can raise an art of the greatest utility interest, aided by the master-spirit man. Here may be seen mor- ing, planing, boring, moulding, circular, vertical, veneering, and other chinery, working away with a melody that may displease some ears, t is always grateful to the industrious.

The Timber Yard will show us what large supplies are required to p all the busy machines at work. Here are heaps of sound, well- soned wood, in readiness to make its appearance in other shapes, to decorate in polished beauty many a comfortable homestead. e visitor should glance at the Upholstery Shops, and see what is ng on in those spacious bee-hives; then pass through the Store and pet Rooms, the Gilders' Shop, the Venetian Blind Manufactory, in ich is a Paint Mill worked by steam-power.

Lovers of carved wood-work will be in no hurry to quit the Wood

THE PREMISES OF MESSRS. JOHN TAYLOR AND SON.

Carvers', Joiners', and Cabinet Makers' Shops, and will remark that the ornamental portion of furniture is much more expeditiously managed now, than in years gone by. Machinery has advanced the arts in this, as in almost every other branch of manufacture, to a perfection that could not be obtained, except by the toil and labour of years, in olden time. There are several other departments of the premises that we have not named, but our readers will obtain from the proprietors and various superintendents of the Works, the most ready and courteous answer to their inquiries.

The WATERLOO HOTEL, under the management of Mr. Rampling, situated opposite the Post-office, possesses claims upon the tourist which are not likely to be overlooked. The house is most comfortable, and affords by its position, an easy access to all parts of the town and its environs. The tourist will thank us for calling attention to this well-conducted

RAMPLING'S WATERLOO HOTEL, EDINBURGH.

establishment. This elegant Hotel is by far the finest in the city; it was built at a cost of upwards of £30,000. We speak from experience in saying that it *deserves* the support of the public. The bedrooms are unusually fine, so also are the coffee and sitting-rooms. The pro-

prietor is in all respects the right man in the right place, and, as natural sequence, the servants are obliging and efficient. That wines and *cuisine* are of the very best quality, the visitor will soon discover; and, upon the whole, we know of few hotels equal to the under notice. We may add that the large Hall, lately known as Waterloo Rooms, and for which the magistrates have granted a new licence, is the property of Mr. Rampling. It is entered from Prince street, and forms a valuable adjunct to this magnificent pile buildings.

The tourist would do well to visit the old-established shop of M Lennie in Prince's-street. Here may be seen an enormous stock Stereoscopic Local Views, Field Glasses, and Pocket Telescopes.

Our musical friends who may wish to purchase a *first-rate* piano, to supply themselves with any other instrument, or the latest music the season, should visit Mr. Paterson's Music and Pianoforte Warehouse in George-street. The premises are large, and contain a vast quantity of Pianos, manufactured on the spot, and deservedly esteemed for their sweetness of tone and fine workmanship.

Purchasers of Scotch Plaids will find their best market at the celebrated plaid establishment of Messrs. Romanes and Paterson situated on the North Bridge.

Objects of Interest in Edinburgh, etc., with Terms of Admittance.

Waterloo Rooms, Regent Bridge, for Concerts, &c., and News Room.	
Nelson's Monument, top where Time Ball is, Observatory, with Camera Obscura, &c., Calton Hill—the most splendid view in the world	1s.
Palace and Chapel of Holyrood (except Saturday, free)	6d.
Parliament House, Parliament Square	Free.
Advocates' Library do.	Order.
Writers to Signet do. do.	Order.
College Museum	1s.
College Library (Burns's Statue, &c.), Monday, Wednesday, and Friday	Order.
Surgeons' Museum, Nicolson Street, Mon., Tues., and Fri., 12 to 3; Sat. 10 to 3	Order.
Heriot's Hospital, Lauriston, open daily, except Saturday	Order.
Donaldson's Hospital, Glasgow Road, Tuesday and Friday	Order.
Antiquarian Society's Museum, 24, George Street, Wednesday and Saturday	Order.
Agricultural Museum, George IV.'s Bridge (except Monday)	Free.
Edinburgh Castle	Free.
Regalia, or Crown Room, Castle	Order from City Chamber

Queen Mary's Room, Castle .. .. Free.
Royal Institution, Mound, Wednesday and Saturday .. .. Free.
Gallery of Casts, Royal Institution .. .. Free.
Top of Scott Monument, Prince's Street .. .. 2d.
Zoological Gardens, Broughton Park .. .. 1s.
Botanic and Horticultural Societies' Gardens, Inverleith Row .. .. .. Free.
Deaf and Dumb Institution .. .. Free.
Theatre Royal, east end of Prince's Street.
Queen's Theatre and Opera House, Broughton Street.
East Prince's Street Gardens .. .. Free.
Short's Observatory, High Street .. .. 1s.
Queen's Drive and Arthur's Seat, from the summit of which is one of the most magnificent views in the vicinity.
Roslin Chapel, 6 miles south of Edinburgh .. .. Gratuity.
(It is considered the finest and most complete specimen of ancient ecclesiastical architecture in Scotland.)
A pleasant walk from Hawthornden (which is open to the public on Wednesday) conducts the visitor through unrivalled woodland scenery to Roslin.
Melrose Abbey, 36 miles distant from Edinburgh, on the line of the North British Railway, is always open .. .. Gratuity.
Abbotsford, the Seat of the late Sir Walter Scott, is only three miles from Melrose, and is shown to visitors on Wednesday and Friday .. .. Gratuity.

The Neighbourhood of Edinburgh.

Our first notice must, of course, apply to Leith, the seaport of Edinburgh, situated about a mile and a half from the centre of the Scottish metropolis. It was not only the first, but, for several centuries, the only port in Scotland, traces of its existence being found in documents of the twelfth century. During its early history few places have so often been the scene of military operations. In 1313 all the vessels in the harbour were burned by the English; and in 1410 a similar act of vengeance was repeated. In 1544 the town was plundered and burnt, its pier destroyed, and its shipping carried off, by the Earl of Hertford, to avenge the insult which Henry VIII. conceived the Scotch had offered him, by refusing to betroth their young queen, Mary, to his son, Prince Edward. Three years subsequent to this, it was again plundered and burned by the English, under Hertford, then Duke of Somerset, and its whole shipping, together with all that in the Forth, entirely annihilated by the English admiral, Lord Clinton. Four years after this the town was fortified by Desse, a French general, who came over with 6,000 men to assist the Queen-

Regent in suppressing the Reformation. On the completion of these fortifications, which consisted in throwing a strong and high wall, with towers at intervals, around the town, the Queen-Regent took up her residence there, and, surrounded with her countrymen, hoped to be able to maintain her authority in the kingdom. These measures, however, had only the effect of widening the breach between her and her subjects, till they finally took up arms, and besieged her in her stronghold. In October, 1559, the Lords of the Congregation invested Leith with an army, but after various ineffectual attempts to gain access to the town by scaling the walls, they were driven back with great slaughter by a desperate sally of the besieged.

In the month of April in the succeeding year, the forces of the Congregation again invested the town, being now aided by an army of 6,000 men, under Lord Grey of Wilton, despatched to their assistance by Elizabeth. On this occasion the contest was protracted and sanguinary. For two months, during which the town suffered dreadfully from famine, as well as from the more violent casualties of war, the struggle continued, without any decisive advantage being gained by either side; at the end of that period, both parties being heartily tired of the contest, a treaty was entered into, by which it was stipulated that the French should evacuate the kingdom, that they should be allowed to embark unmolested, and that the English army should, upon the same day, begin its march to England. Immediately after the conclusion of this treaty the walls of Leith were demolished by order of the Town Council of Edinburgh, and no vestige of them now remains. In 1561, when Queen Mary came from France to take possession of the throne of her ancestors, she landed upon the pier of Leith; but of this pier nothing now exists. In 1650 the town was occupied by Cromwell, who exacted an assessment from the inhabitants. In 1715 the citadel was taken by a party of the adherents of the Stuart family, but, upon being threatened by the Duke of Argyle, it was speedily evacuated. George IV., upon visiting Scotland in 1822, landed at a spot a little to the north of the New Drawbridge, where an inscribed plate has been inserted in the pavement to commemorate the event.

Leith presents few antiquities of any interest. Among those which remain may be mentioned the parish church of South Leith, a Gothic

edifice, built previous to the year 1496, and the old church of North Leith, founded in 1493. In the Links, upon the south-east side of the town, may be seen several mounds, raised for the purpose of planting cannon, by the besieging army, in 1560.

The town is for the most part irregularly and confusedly built, and a great portion of it is extremely filthy, crowded, and inelegant. Some parts of it, again, are the reverse of this, being spacious, cleanly, and handsome. Such are two or three of the modern streets, and various ranges of private dwellings, erected of late years on the eastern and western skirts of the town.

The modern public buildings worthy of remark are the Exchange Buildings, a large and elegant structure in the Grecian style of architecture, containing a spacious and handsome assembly-room, a commodious hotel, and public reading-room. The expense of the erection was £16,000. The Custom House, situated in North Leith, is also a very splendid building; it was erected in 1812, at an expense of £12,000. The premises of the Leith branch of the National Bank, a neat little edifice, were erected in 1805-6. The New Court House is by far the most elegant building in the town, and forming altogether, whether the chasteness of the design or the neatness of the workmanship be considered, a very favourable specimen of modern architecture on a small scale. The parish church of North Leith is a handsome though unpretending structure, surmounted by a tasteful spire; the living is one of the best in the Church of Scotland.

The chief manufactures are ropes and cordage, sail-cloth, bottles, soap, and candles. There are several breweries and a distillery, and ship-building is carried on to a considerable extent.

Large sums have been expended, from time to time, with the view of improving the harbour and docks, but they are still considered inadequate to the trade. The pier, which is a fine work, forms an excellent promenade.

Leith, with Musselburgh, Portobello, and Newhaven, returns a member to Parliament.

Newhaven is a small fishing village, situate about a mile further up the Forth than Leith. It possesses a stone and a chain pier, but neither the one nor the other has a sufficient depth of water to admit of the approach of steamers of large size. The London boats, accord-

ingly, now land and take on board their passengers at Granton, a little farther up the Firth, where a low-water pier has been constructed by the Duke of Buccleuch.

The inhabitants of Newhaven are a laborious and hardy race. They form a distinct community, rarely intermarrying with any other class. The male inhabitants are almost all fishermen, and the females are constantly occupied in vending the produce of their husbands' industry in the markets or streets of Edinburgh.

The Edinburgh and Newhaven Railway affords the means of returning to Edinburgh in seven minutes. At the Newhaven end, the terminus is at Trinity, a little to the west of the village; and at Edinburgh, the temporary terminus is at the foot of Scotland-street.

From Edinburgh to Newhall, about twelve miles distant, offers a most delightful promenade, the route lying amidst scenes remarkable for historical interest and great natural beauty, such as Merchiston Castle, the hills of Braid, the Hare Stone, Woodhouselee, Glencorse Burn, &c. &c.

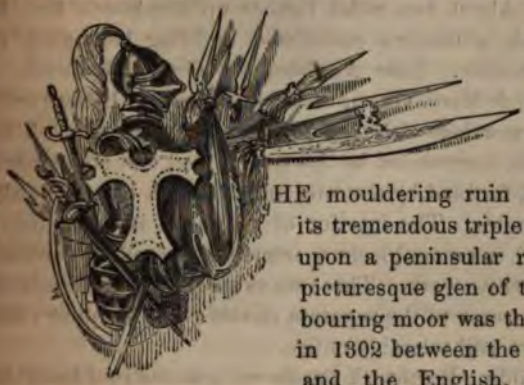
The hills of Braid command a most beautiful view of Edinburgh, with the Firth of Forth, its islands, and the shores of Fife in the background. The more northern side, called Blackford Hill, is the spot mentioned in "Marmion."

Roslin Chapel, about seven miles from the city, on the banks of the North Esk, should be seen by every tourist. The building was founded in 1446, by William St. Clair, Earl of Orkney and Lord of Roslin. At the Revolution of 1688 it was greatly injured by the mob.

"This building," says Mr. Britton, "may be pronounced unique, and I am confident it will be found curious, elaborate, and singularly interesting." The nave is bold and lofty, enclosed, as usual, by side aisles, the pillars and arches of which display a profusion of ornament, executed in the most beautiful manner.

The "Prentice's Pillar," in particular, with its finely-sculptured foliage, is a piece of exquisite workmanship. It is said that the master builder of the chapel, being unable to execute the design of this pillar from the plans in his possession, proceeded to Rome, that he might see a column of a similar description which had been executed in that city. During his absence, his apprentice proceeded with the execution of the design, and, upon his master's return, he

found this finely-ornamented column completed. Stung with envy at this proof of the superior ability of his apprentice, he struck him a blow with his mallet, and killed him on the spot. Upon the architrave uniting the Prentice's Pillar to a smaller one is the following sententious inscription from the book of Apocryphal Scripture called Esdras:—"*Forte est vinum, fortior est rex, fortiores sunt mulieres, super omnia vincit veritas.*" Beneath the Chapel lie the Barons of Roslin, all of whom, till the time of James VII., were buried in complete armour. The Chapel is now undergoing extensive repairs.



There is no stated fee for admission to the Chapel, but the exhibitor expects a small gratuity.

THE mouldering ruin of *Roslin Castle*, with its tremendous triple ties of vaults, stands upon a peninsular rock, overhanging the picturesque glen of the Esk. The neighbouring moor was the scene of a conflict in 1302 between the Scots, under Comyn, and the English, in which the latter were defeated.

Near Roslin are the *Caves of Gorton*. A footpath down the river conducts to *Hawthornden*, the picturesque habitation of the poet Drummond, the friend of Shakspere and Ben Jonson.

This romantic spot seems to have been formed by Nature in one of her happiest moments. All the materials that compose the picturesque seem here combined in endless variety: stupendous rocks, rich and varied in colours, hanging in threatening aspect, crowned with trees that expose their bare, branching roots: here the gentle birch hanging, midway, and there the oak, bending its stubborn branches, meeting each other; huge fragments of rocks impede the rapid flow of the stream that hurries brawling along unseen, but heard far beneath, mingling in the breeze that gently agitates the wood.

With all this variety of beautiful scenery the tourist will not fail to connect the literary associations that render the place so famous.

NEAR the beautiful village of *Lasswade*, further on, is *Melville Castle*, and two miles beyond is *Dalkeith*. The celebrated *palace* of the Duke of Buccleuch is in its immediate neighbourhood, surrounded by a park of great extent. The building itself derives its chief illustrations from history, for, although large, it is dull and heavy-looking.

About a mile from Dalkeith is *Newbattle Abbey*, a seat of the Marquis of Lothian, occupying the site on which stood Newbattle Abbey. About two miles further up the South Esk is *Dalhousie Castle*, a modern castellated building belonging to the Marquis of Dalhousie. Near Arniston is *Borthwick Castle*, a stately fortress, to which Mary, Queen of Scots, retired with Bothwell, after her unfortunate marriage with that unprincipled nobleman. The castle occupies a knoll, surrounded by the small river, and is enclosed within an outer court, fortified by a strong outward wall, having flanking towers at the angles. The interior of the castle is exceedingly interesting. The hall is a magnificent apartment; the ceiling consists of a smooth vault of ashlar work. Three stairs ascending at the angles of the building give access to the separate stories; one is quite ruinous, but the others are still tolerably entire.

The licence for building Borthwick Castle was granted by James the First to Sir William Borthwick, in 1430.

In the manse of Borthwick Dr. Robertson, the historian, was born.

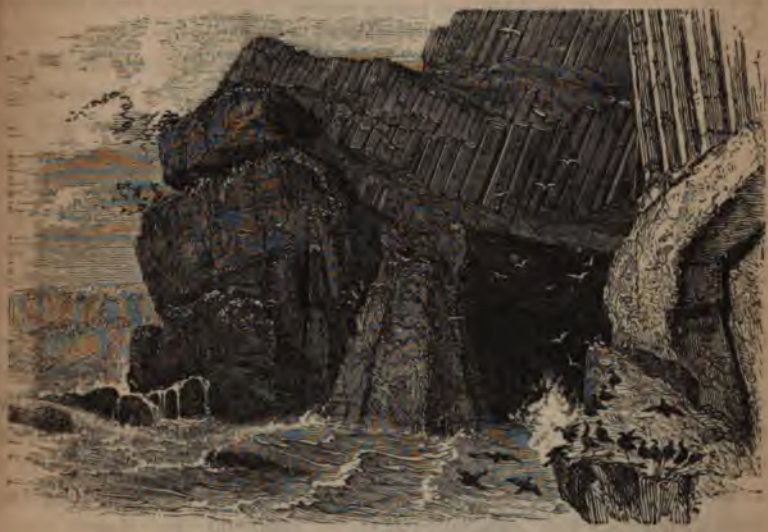
Eastward of Borthwick, and within sight of its castle, stands *Crichton Castle*, on the banks of the Tyne, twelve miles and a half south of Edinburgh. This celebrated place is described by Sir Walter Scott in Marmion.

Three miles south of Edinburgh are the ruins of *Craigmillar Castle*, consisting of a strong tower, flanked with turrets, and connected with inferior buildings. This building was often occupied as a royal residence, and was a favourite resort of Queen Mary.

Among the more distant excursions we may mention the following, several places in which we shall describe in our account of the neighbourhood of Glasgow.

From Edinburgh to Inverness and back.—To Glasgow, by Edinburgh

and Glasgow, or Caledonian Railways; thence per steamer through Kyles of Bute and Crinan Canal (one day's sail) to Oban. From Oban to Iona and Staffa (one day's excursion). From Oban, per steamer, to Fort William, Fort Augustus, and Inverness, through the Caledonian Canal. On this route the chief objects of interest are Ben



STAFFA.

Nevis, the Fall of Foyers, and the parallel roads of Glenroy. From Inverness to Edinburgh, per steamer direct to Edinburgh, touching at Aberdeen; or per coach through Nairn, Elgin (with its magnificent Cathedral), Fochabers (Gordon Castle), to Huntly; thence by rail to Aberdeen, Montrose, Arbroath, Perth, Dundee, &c., to Edinburgh.

This route should occupy about a week.

AND now, good reader, having briefly and very imperfectly pointed out some of the chief attractions in this beautiful town and its environs—places renowned in history, tradition, and song—we must, seeing that our space is limited, hurry onwards to the city of St. Mungo, where we have much to see and describe

bidding farewell to Edinburgh in the following beautiful lines of Hallam:—

"Even thus, methinks, a city reared should be;
Yea, an imperial city, that might hold
Five times a hundred noble towns in fee,
And either with the might of Babel old
Or the rich Roman pomp of empiry
Might stand compare,—highest in arts enrolled,
Highest in arms, brave tenement for the free,
Who never crouch to thrones or sin for gold.
Thus should her towers be raised: with vicinage
Of clear bold hills, that curve her very streets,
As if to vindicate, 'mid choicest seats
Of Art, abiding Nature's majesty;
And the broad sea beyond, in calm or rage
Chainless alike, and teaching liberty."

THE EDINBURGH AND GLASGOW RAILWAY

AS originally incorporated by 1 and 2 Vict., cap. 58, to run between those places, with a branch to Falkirk. Capital, £900,000 in shares, and £300,000 in loans. By Act 15th Vict., cap. 109 (17th June, 1852), this Company was re-incorporated under the same title, and every Act previously obtained repealed, except Special Acts as to other companies specified. The Union Canal became embodied in the Company in 1848. The Company was re-incorporated and consolidated by 15 Vict., 1852. Productive mileage, 142 miles, including 32 of Union Canal.

By 18 and 19 Vict., cap. 158 (July 23rd, 1855), the Company undertook to subscribe £50,000 to the Dumbartonshire and Helensburgh

Power was also taken to raise £150,000 by shares to enlarge the Queen-street station, and for other purposes, and also to raise a further sum of £30,000. The Company is also entitled to issue preference shares, in lieu of borrowing.

The Edinburgh and Glasgow Railway also leases the Edinburgh and Bathgate.

By 21 and 22 Vict., cap. 64 (28th June, 1858), the Stirling and Dunfermline is vested in the Edinburgh and Glasgow.

The Forth and Clyde Canal Company is constructing a branch from the harbour of Grangemouth, to join the Edinburgh and Glasgow line at Falkirk.

Caledonian.—After a long contest with this company, a contract was entered into, under an award by Mr. Houldsworth, in 1857, to the following effect:—To the Edinburgh and Glasgow 30·64 of the net traffic receipts of both lines, and 69·36 to the Caledonian. By a later arrangement, the Scottish Central was induced to break off its mutual working with the Edinburgh, Perth, and Dundee, and to join the Caledonian and Edinburgh and Glasgow confederacy.

Traffic.—The receipts for the half-year ending 31st January, 1861, showed that £166,617 had been received, and £64,448 expended; there was an increase of £9,456 in passengers and goods as compared with the corresponding half of the preceding year. The working expenses, including the usual sum for maintenance and renewal of way, amounted to 38 per cent. The net balance of £55,023, after providing a dividend of 5 per cent., or £6,875 for preference stock, admitted of a dividend to the ordinary shareholders at the rate of 4 per cent., amounting to £44,467, leaving £3,680. The revenue account for the half-year ending 31st July, showed that £161,951 had been received, and £61,042 expended, leaving a balance of £100,909. The increase in passenger traffic for the half-year amounted to £2,087 in goods traffic, to £5,745, and in parcels to £83; total increase, £7,916. The working expenses were £55,862 as against £54,953. The net balance of £53,387, after providing 5 per cent., or £6,875 for preference stock, admitted a dividend on ordinary stock at the rate of 4 per cent. per annum, amounting to £44,467, and left £2,044.

Glasgow, Dumbarton, and Helensburgh.—This line is worked by agreement with the Edinburgh and Glasgow Railway, by which the whole *expenses are divided by* the train-miles run.

THE people of North Britain are proverbially cautious, but they are also sagacious and persevering. A long time elapsed before they would venture on so large a project as a grand trunk railway; but having carefully watched the movements of their brethren of the South, in respect to these vast national undertakings, and being satisfied of the important results likely to accrue from their general introduction into Scotland, they commenced operations in earnest.

We may briefly describe the COURSE OF THE RAILWAY BETWEEN EDINBURGH AND GLASGOW, reserving a more particular description of the various objects of interest on the line for another page.

Leaving the terminus at Edinburgh, the general course of the line is nearly west, as far as Falkirk, from whence it pursues a direction about south-west of Glasgow, and runs nearly parallel with, and on the north of the Edinburgh and Glasgow Union Canal, which it crosses near Lock Sixteen of the Forth and Clyde Canal, from whence it is nearly parallel, and on the south of this canal, all the way to Glasgow. Within about three miles and a half of the Glasgow terminus, it crosses over the Monkland and Kirkintilloch Railway.

The sharpest *curve* is at Springvale, north of Glasgow, being of about half a mile radius. The radius of curvature is generally about a mile. With the exception of the inclined plane at Edinburgh, the *gradients* throughout are all of the first class.

The amount of *earthwork* on this line is considerable. The principal cutting, which is in Abercorn parish, is about fifty feet in depth. It is nearly three miles in length, and amounting to a million of cubic yards.

There are altogether four *tunnels* on main line, amounting in length to 2,200 yards. The first is at Haymarket, Edinburgh; second, Winch-

burgh; third, Falkirk; and the Glasgow, 1,040 yards in length; the span of each is 26 feet, and the height 22 feet. These tunnels are built of stone and brick, but chiefly of brick. The arches are 18 inches, and the side-walls 21 inches in thickness. Except the Falkirk tunnel, which is a curve of a mile radius, the whole are in straight lines.

The *bridges* over the railway are generally of semi-elliptical form, and of 28 feet span; there are 31 turnpike and high-road bridges under the railway, and 33 over. The principal skew bridge is over the turnpike road at Linlithgow, which is constructed at an angle of 33°.

There are several *viaducts* of considerable extent, the principal of which are over the Almond and Avon waters. The Almond viaduct, which is built of stone, is by far the most extensive work of the kind on the whole line, and consists of 36 segmental arches, each of 75 feet span; the piers on each 7 feet in thickness. The whole length of the viaduct is 720 yards, the extreme width 28 feet 4 inches, and the general height about 50 feet. The viaduct over the Avon valley consists of 20, and the Redburn viaduct of 8 arches, respectively.

HAVING left the Station at Edinburgh, which is well situated in Prince's-street, in the hollow which divides the Old from the New Town, the train passes through Prince's-gardens, and the stranger will notice the ornamental bridges thrown over the line. Passing at the foot of the Castle, we cross a viaduct,—(our readers will understand that we are travelling with our back to the engine)—and after passing through a tunnel, we reach CORSTORPHINE STATION, three miles and a half from Edinburgh. The parish village is situated three miles west of the Scottish Metropolis, on the New Glasgow-road. Within the ancient collegiate church (an erection of the thirteenth century), now

used as a parochial place of worship, there exist several sepulchral effigies of the Lords Foresters, a family of historical note in the fifteenth century.

Corstorphine Hill, a slight eminence between the village and the city, is beautifully planted, and throughout its sylvan glades are scattered several elegant seats and villas, commanding very extensive and delightful prospects. Under the east slope are placed *Bareldine House* and *Craigeroole*. At Craigleith, in the neighbourhood, a mile and a half from Edinburgh, on the Queensferry-road, is an immense quarry of sandstone, from which nearly all the modern part of Edinburgh has been dug. Deeply embedded in this rock, a few years ago there was found the trunk of a great pine, reduced to the nature of the mass in which it had been involved.

Two miles from Corstorphine we reach Gogar Station, near which will be perceived the ruins of an old church. Proceeding on the line we next arrive at the Ratho Junction Station, from whence the visitor may, if he chooses, diverge from the main route and proceed by the Branch Line to Bathgate, almost ten miles distant, passing by *Broxburn*, *Houston* and *Livingston* (the patrimony of the family of the same name, lately ennobled under the title of Earl of Linlithgow, but now extinct in the male line).

The thriving town of *Bathgate* occupies a piece of slightly elevated ground, consisting of an old town and a new, and containing in 1851 (inclusive of the rural part of the parish) a population of about 4,000. Bathgate was, in 1824, constituted a free burgh of barony by Act of Parliament, and is managed by a provost, three bailies, twelve councillors, a treasurer, and a town-clerk, the magistrates and town council being elected by the burgesses. At the east end of the town a handsome and conspicuous building was erected a few years ago, in consequence of a bequest by a gentleman named Newlands (a native of the parish, who realized a fortune in Jamaica), for a free school, under the management of five teachers. The population of Bathgate is supported partly by the adjacent lime and coal works, and partly by weaving. The adjoining lands formed part of the dowry given by Bruce, with his daughter Marjory, to Walter, the High Steward, who resided, and in 1328 died, at his residence here, the remains of which are still pointed out in the midst of a bog in the

neighbourhood, together with some narrow causeways which led to it through the soft ground.

Torphichen, a little straggling village, lies in a sheltered plain, about four miles directly north from Bathgate, now consisting of only a few cottages. Fragments of old buildings, of a massive and castellated appearance, remain scattered throughout the village, to attest the former splendour of this settlement.

From Bathgate the tourist may proceed by railway to *Bo'ness*, or he may visit Morningside. There is also a branch to Shotts Iron Works.

Returning to Ratho Junction Station, and proceeding onwards, we next reach WINCHBURGH STATION, twelve miles from Edinburgh. The small village of this name was remarkable at one time for the culture of bees. It was the first place where Edward the Second drew bridle on his retreat from Bannockburn. In the neighbourhood is the ruin of Niddry Castle, once a seat of the Seton family, and the place where Queen Mary first slept after her escape from Lochleven.

NIDDRY CASTLE.
(From a photograph by Lennie.)

Hopeton House, the seat of Earl of Hopeton, and grounds, are very magnificent, and should be seen.

Five miles and three quarters from Winchburgh is LINLITHGOW STATION. The royal burgh of Linlithgow, the head

town of the county, lies in a hollow, along the border of a small lake. It consists chiefly of a single street, of old and decayed appearance, in the centre of which there is a small square, containing a town-house. Behind the town-house, on a promontory jutting into the lake, are situated the church and palace, the latter one of the handsomest and most interesting memorials of Scottish royalty which now exist, though long since reduced to a condition of ruin. The population is partly supported by certain manufactures, and partly by the usual trades of a country town. Tanning and shoemaking are carried on here to a considerable extent. The town derives great advantages from being touched by the Union Canal, and from its situation on one of the principal lines of road in Scotland; yet, upon the whole, it has a dull and decayed appearance. The town is of great antiquity, but appears to have been erected into a royal burgh so lately as the reign of Robert II. In early times it was more flourishing than at present, and had a port at Blackness.

The *Palace* is the chief object of interest in Linlithgow.

"Of all the palaces so fair,
Built for the royal dwelling,
In Scotland, far beyond compare,
Linlithgow is excelling;
And its park, in genial June,
How sweet the merry linnet's tune!
How blythe the blackbird's lay!
The wild buck *bells* from ferny brake,
The coot dives merry on the lake;
The saddest heart might pleasure take
To see a scene so gay!"

On this spot Edward the First built a small castle, in which he spent the winter of 1301. Some years after, when Bruce had reduced nearly all Scotland under his subjection, he took the Castle of Linlithgow by a curious stratagem. The garrison was supplied with hay by a neighbouring rustic, of the name of Binning, who was in the patriotic interest. This man proposed to his Sovereign to conceal some armed men in his wains of hay, and thereby smuggle them into the fort. Bruce adopted the project, and took the Castle. He rewarded the faithful rustic with some lands in the neighbourhood, and the Binnings of Wallyford, descended from that person, still bear in their coat-armorial, a wain

ded with hay, with the motto, "*Virtute dologue.*" Bruce demolished Castle; it appears, however, to have been rebuilt by the English

THE PALACE OF LINLITHGOW.

ring the minority of David the Second. This Castle probably still sts, as part of the west side of the palace. James the Second and nes the Third successively assigned it, with the adjacent lands, as t of the dowries of their consorts; and thus it seems gradually to e become one of the royal palaces. It was a favourite residence of nes the Fourth, who built the east side of the quadrangle, which ears to have been at one time the front. James the Fifth also led much to the buildings, which were now so fine that his consort, ry of Guise, on being conducted by him to this dotarial house, d that "she had never seen a more princely palace."

The most memorable incident in the history of Linlithgow occurred cember 7, 1542, in the birth of the unfortunate Queen Mary, who nained here with her mother several months, until it was found cessary to seek protection within the secure walls of Stirling.

During the troublous times which followed, Linlithgow was the frequent scene of political transactions.

The ruin of the palace is a massive quadrangle, displaying in the outside an appearance of strength, rather than elegance. It is approached from the town by an avenue, at the head of which is a fortified gateway. The south side of the palace, through which there is a vaulted entrance, contains a large apartment, said to have been a chapel. An obsolete gateway is still to be seen on the east side, with the place for the portcullis, and a sweeping avenue on the outside, which is still lined with trees. Above this entrance was the Parliament-hall, once a splendid apartment, but now a roofless ruin. On the west side, which seems to have been originally a tower, and the nucleus of the whole palace, is shown the apartment where Queen Mary was born. At the north-west angle is a curiously ornamented small room, looking out upon the lake, and called the King's Dressing-closet. In the centre of the square was a fine fountain. Government intend to restore the exterior of Linlithgow Palace to its condition in 1745, before its destruction by fire.

VIEW OF THE ROOM IN WHICH QUEEN MARY WAS BORN.

The view from the top of the ruins is remarkably interesting. Next to the palace, as an object of curiosity, is the *Church*, which stands between the town and the former building. This venerable and impressive structure is one of the finest and most entire specimens of Gothic architecture in Scotland. The steeple is surmounted by a structure in the shape of an imperial crown, which has a very fine effect

atever point it is viewed. The eastern half of the church is a place of worship.

VIEW FROM THE PALACE OF LINLITHGOW.

Cross Well, in front of the town-house, is a very curious and d erection. Of the original, which was built in 1620, the pre- ice, which bears date 1805, is said to be an exact fac-simile. ic is by no means deficient in elegance, but what forms its rit is the amazing intricacy of the sculpture.

of the private dwelling-houses in Linlithgow bear appearance lerable age. One almost directly opposite to the cross exhi- ne in front, inscribed with the date 1593, and the words "Ve varle." (We build, you see, warily.) Another, a little to the , is pointed out as occupying the site of that of Hamilton, the olic archbishop of St. Andrew's, from which (Jan. 23, 1570) t Moray was shot by Hamilton of Bothwellhaugh.

g Linlithgow, we proceed on the railway to Polmont Station ion with the Scottish Central Railway, to Perth, Dundee, &c., t thirteen miles from Linlithgow, after passing through a e reach

Falkirk Station, one mile from the town of Falkirk, which

is the largest seat of population in Stirlingshire, and the m
portant place which occurs in a district touching upon Edinburg
gow, Perth, and Dumfries. The immediate environs are studd
various populous villages, including Carron, Bainsford, Camel
Polmont. The town is substantially built, on a slope overlook
fine alluvial plain denominated the Carse of Falkirk. Forme
a burgh of barony, it is now a parliamentary burgh of the secon
managed by a town council of twelve members, among whom ar
vost, three bailies, and a treasurer, and uniting with Airdrie, Ha
Lanark, and Linlithgow, in electing a member of the House o
mons. The town is remarkable for its markets, more particul
its three trysts, which take place at the fall of the year in a field
neighbourhood, and at which most of the disposable live pro
the Highlands has for many years changed hands, in order
forwarded for consumption to the more populous districts of Sc
and to England. Much retail trade is carried on in Falkir
there are a few manufactures. Branches of three banks ar
blished. The town has excellent means of communication in the
and Clyde Canal, and the Union Canal, which unite in its imm
vicinity.

The first battle of Falkirk took place July 22nd, 1298, betwe
Scottish army under Wallace, and the superior host of Edward the
on a piece of low ground between the town and the river Carro
English approaching from the east. Wallace on this occasio
to his men, "Now I have brought you to the ring, hop [that is,
gif you can." His army, after a stout resistance, was overpo
by the English, who thus gained a temporary ascendency in Sco
The second battle of Falkirk took place January 17th, 1746, o
heights a mile to the south-west of the town, between the Goverr
forces under General Hawley and the Highland army of Prince C
Edward. The former, advancing hurriedly from the east, without
cannon, to gain the advantage of the ground, were met by a s
blast of wind and rain, and an impetuous charge from the Highla
the united influence of which beat them back rather than def
them. The Union Canal passes through the scene of this action

Callender House, immediately to the east of Falkirk, is an ele
mansion, partly old and partly new, surrounded by a park of four

dred Scottish acres. The estate or barony of Callender originally belonged to a family of the same name; on the forfeiture of Patrick Callender of Callender, it was gifted, in 1361, by King David II., to a brave knight, Sir William Livingstone, whose descendants were its proprietors till the forfeiture of James Livingstone, fifth Earl of Linlithgow and fourth Earl of Callender, for his concern in the rebellion of 1715. It was possessed in 1745-6—by what right we have not learned—by the Earl of Kilmarnock, who had married the daughter of the attainted Lord Livingstone. The house contains a room in which Queen Mary slept, when attending a baptism in the Livingstone family; and another which afforded accommodation for a night (September 15, 1745) to Prince Charles Edward, then pursuing his march upon Edinburgh. There is a tradition that the Countess of Kilmarnock made herself instrumental in the overthrow of the King's troops at the battle of Falkirk, by detaining General Hawley at dinner in Callender House, and deceiving him respecting the approach of the Highlanders.

Three miles to the north-west of Falkirk, at the efflux of the Carron into the Firth of Forth, is situated GRANGEMOUTH, the principal port of Stirlingshire. It took its rise about the year 1777, in consequence of the opening of the Forth and Clyde Canal, which here joins the sea. Besides serving as an emporium for the general export and import business of the district, and in addition to the importance it derives from the canal, Grangemouth is the port of the CARRON IRON WORKS, situated about three miles distant, on the banks of the Carron, and two miles from Falkirk. There is a Branch Railway from Falkirk to Grangemouth.

These works were established in 1760, under the care of the celebrated Dr. Roebuck, by a company possessing a capital of £50,000, in six hundred shares. The mines of coal and iron in the neighbourhood, and the facility of communication, pointed out the place as the most eligible for such an enterprise in Scotland.

The parish church of *Larbert* crowns a neighbouring height on the road from Falkirk to Stirling. About the year 1630, ministerial duty was here performed by Master Robert Bruce, so remarkable for his pulpit eloquence, and his opposition to James VI. and Charles I. At one of his sermons here, he converted from episcopacy the equally

celebrated Mr. Alexander Henderson, whose services were of so much importance in the great business of the National Covenant and in the Westminster Assembly of Divines. *Kinnaird*, in the Carse of Falkirk, was the patrimonial property of this extraordinary preacher, whose descendant in the sixth degree, James Bruce of Kinnaird, rendered himself famous, in a subsequent age, by public services of a different kind; namely, the dangerous and toilsome journey he made to explore the source of the Nile, and the valuable and laborious account he gave of his travels. After outliving such perils as few men are ever exposed to, this eminent man died April 27, 1794, in his house of Kinnaird, in consequence of slipping his foot in the staircase, while handing a lady from the drawing-room to her carriage. In the house are still preserved many of the antiquities and curiosities which he brought home from the countries he had visited.

Soon after passing Larbert, the Stirling road intersects the ground formerly occupied by the *Tor Wood*, in which Sir William Wallace used to find shelter when hard pressed by his enemies. The remains of a huge tree, in whose boughs he had concealed himself, and under which he and his men had rendezvoused, existed till the close of the last century, though latterly in a much decayed condition. Its stump was finally dispersed in fragments, as memorials of the hero: a snuff-box, formed from it, was presented by the Earl of Buchan to Washington, whose modesty induced him, in his will, to remand it to the donor. A new tree has been planted to keep in remembrance the spot where the old one grew. The Torwood was at a later period the scene of a memorable transaction. In autumn, 1680, when the severity of the Government had driven every conventicler from the fields except Mr. Donald Cargill, that individual, seeing that weapons and prayers had been alike ineffectual in improving the condition of Presbytery, resolved to try the effect of ecclesiastical censure. He accordingly held a great field-meeting in the Torwood, where, after preaching from Ezekiel xxi. 25, 26, 27, and 1 Corinthians v. 13, he proceeded thus:—"I, being a minister of Jesus Christ, and having authority and power from Him, do, in His name and by His Spirit, excommunicate, cast out of the true Church, and deliver up to Satan, Charles II., king, &c." He then stated his grounds for doing so, and in like manner delivered over to *Satan the* Duke of York, the Duke of Monmouth, the Duke of Lauder-

dale, and several others; concluding with an affirmation that no powers on earth, either of kings, princes, magistrates, or ministers of the Gospel, could, without the repentance of the individuals, reverse the sentence he had passed. The Torwood Excommunication had the effect of greatly increasing the severity of the Government against the non-indulged Presbyterians.

The *Carron* may be termed a classic stream. The scenes of some of Ossian's poems were, in the opinion of Macpherson, upon the banks of this river. Besides the objects upon its banks which have already been adverted to, there are or were several others of considerable antiquarian interest. In the corner of a small enclosure, between the Carron Works and Stenhouse, stood *Arthur's Oven*, or what was commonly so called; a curious antique structure, of circular and dome-like shape, about twenty-two feet high and thirty in diameter, composed of dry courses of squared stones—having a narrow orifice at the top, and a door at one side—and being seated all round the interior with a stone bench. To the great chagrin of Scottish antiquaries, Arthur's Oven was taken to pieces, in 1743, by an unreflecting proprietor, to build a neighbouring dam.

Near the place where the Stirling road crosses the Carron, is a piece of ground said to have been the site of a Roman town named *Camelon*: a modern village of the same name now lines the road half a mile to the south-east. Old Camelon is described as having been a maritime town, the sea then flowing over the Carse of Falkirk. In testimony of this fact, an anchor was found near the spot during the last century. It is by no means unlikely that the sea did once touch upon the bank where Camelon stood, for all along the Firth of Forth, on both sides, there are traces of a former beach, fully twenty feet above the level of the present—a phenomenon probably owing to what geologists now acknowledge, under the term of *gradually elevating forces*, as one of the stated operations of nature.

A short way above Larbert Bridge, near the remains of a Roman bridge across the Carron, is the spot pointed out by tradition as the scene of a conference which took place on the evening of the battle of Falkirk, between Bruce (father of King Robert) and Wallace, standing on different sides of the river. A second conference is said to have taken place at the chapel of Dunipace, near by, and the consequence

was the retirement of Bruce from the army of the English monarch. At Dunipace, the banks of the river are extremely romantic. Close beside it are the celebrated *Hills of Dunipace*—two small eminences, of unequal bulk, which the elder Scottish historians believed to have been thrown up to commemorate a peace between the Romans and Caledonians, and to have received their appellation [q. d. *duni pacis*, hills of peace] from that circumstance. At the neighbouring village of *Denny* there are several paper-mills, printfields, and other large works. Several miles farther up the Carron, are the remains of *Sir John Graham's Castle*, a tower affirmed to have belonged to that hero, and which was dismantled in the fifteenth century. In the eastern part of the country, twelve miles from Falkirk, thirty-five from Edinburgh, and twenty-eight from Glasgow, the ancient royal burgh of *Stirling* occupies a conspicuous site on a rising ground immediately overlooking the river Forth, being surrounded in all directions by a beautiful tract of level country, which is bounded to the north and west by the Highland hills. The central and original part of the town bears an appearance rather antique than elegant, but there are several good streets and a great profusion of neat villas in the outskirts. The higher ground towards the west is crowned by the far-famed *Stirling Castle*, and the whole bears a striking resemblance, though somewhat in miniature, to the Old Town and Castle of Edinburgh.

The natural strength of the rock on which the Castle is situated, and its position at the only point of easy land communication between the northern and southern parts of the kingdom, seem to have rendered this place a seat of population from the earliest periods of our history. The time when there was no Stirling Castle is not known in Scottish annals. At the end of the twelfth century it was one of the four principal fortresses in Scotland. During the wars which Edward I. and Edward II. carried on for the subjugation of Scotland, the importance of Stirling Castle is extremely conspicuous; the first of these monarchs besieged it in person, and with great difficulty reduced it in 1304; and it was to relieve it from the beleaguering arms of Bruce that Edward II. undertook the great expedition which terminated in his defeat at Bannockburn. The town, which rose during those early ages on the neighbouring slope, became a royal burgh in the reign of Alexander I., and for some ages held a conspicuous rank among

Scottish towns of the same class. From the reign of James I. the Castle contained a palace, which was a favourite residence of the native monarchs; here James V. and James VI. in succession spent the years of their respective minorities—here Lyndsay sported with the one, and Buchanan taught the other. The Castle was besieged by Monk in 1651, and taken; but it held out against the irregular attack of Prince Charles Edward in 1746. This fortress—one of the four stipulated in the Act of Union to be kept in repair—is now virtually a barrack; yet it still contains many objects of historical interest.

Leaving Falkirk Station, we notice the Forth and Clyde Canal, and pass through an enormous fir plantation, remarking also the branch line of the Caledonian Railway, which joins as we enter

Greenhill Station; leaving which, and crossing the Scottish Central Railway, the train passes over a splendid viaduct, and enters

Castlecary Station, thirty-two miles from Edinburgh. The Roman wall, between Clyde and Forth, here crosses the line, the remains of the ditch in one or two places. After passing through a deep cutting of solid granite, we reach

Croy Station, and near

Campsie Junction Station, cross the Monklands Railway, a branch of the lines under this designation which traverse the rich mineral district between Airdrie and Bo'ness, in the time of Defoe a first-class sea-port on the Forth.

A branch line leads by *Kirkintilloch*, *Milton*, and *Lennoxtown*, to the village of Campsie. In the appearance of the little village or clachan of *Campsie*, nestling under the hills, with a pleasant valley spread out before it, there is something that interests the imagination. Lamberton, the patriotic Bishop of St. Andrew's, in the days of Bruce, and Cardinal Beaton, were successively parsons of Campsie.

From Campsie, a remarkably steep and difficult path across the hills, denominated the *Crow Road*, leads to the parish or village of *Fintry*, on the Endrick, an active seat of the cotton manufacture. The *Loup of Fintry*, a cascade of the Endrick, ninety-one feet in height, is a couple of miles above Fintry, and near to Sir John Graham's Castle.

The *Campsie Hills*, occupying the centre of Stirlingshire, although none of them exceed the height of 1,500 feet above the level of the

sea, are conspicuous from every part of the county, and from the neighbourhood of Glasgow. The large works of Dalglish, Falconer, and Co. are here. (See our Commercial Aspect of Glasgow.) Campsie is much resorted to by parties from Glasgow, on account of *Campsie Glen*, a beautiful woody recess in the hills behind the village, distinguished by fine waterfalls. Leaving Campsie Junction, the train passes through granite cuttings, and arrives at the distance of three miles at BISHOP-BRIGGS STATION, and shortly afterwards at

COWLAIRS STATION, where the passengers' tickets for Glasgow are collected. The train proceeds towards its destination, for about a mile and a half, when it passes through a fine tunnel into the Glasgow Station, situated in George-square, and introduces us to the GREAT CITY.

History.—The origin of the name Glasgow is doubtful. Some conjecture that it is compounded of two Gaelic words—*glass*, signifying "grey," and *gow*, "a smith;" and infer that some son of Vulcan had the felicity of conferring his own appellative on the infant city. Others trace the name to two ancient British words which might signify "a dark glen;" and conjecture that a deep ravine, a little to the east of the Cathedral, gave name to a few cots planted in that neighbourhood, by the earliest settlers, in which this great city had its humble origin. Others again have conjectured that the name originally signified the "Greyhound Ferry." The Romans had a station on the river Clyde at this spot. The wall of Antoninus, extending between the friths of Forth and Clyde, a few miles north of the city, embraced the province of *Valentia*, in which Glasgow is situated. History tells us little more of this locality till about the year 560, when the see of Glasgow was founded by Kentigern or St. Mungo. About 1115, the see was refounded by David, Prince of Cumberland; and from this period downwards, the history of Glasgow, civil and ecclesiastical, is generally distinct and authentic. The see of Glasgow was one of the most opulent in the kingdom. Its bishops, and latterly archbishops, were lords of the lordships of the royalty and baronies of Glasgow; and eighteen baronies of land pertained to them in the sheriffdoms of Lanark, Dumbarton, Ayr, Renfrew, Peebles, Selkirk, Roxburgh, Dumfries, and the then stewartry of Annandale, including 240 parishes. Besides, there was a large estate in Cumberland, subject to their

jurisdiction, which was termed "the Spiritual Dukedom." In 1540, Bishop Turnbull obtained from James II. a charter, erecting the town and patrimonies of the bishopric into a regality. This spirited prelate also procured a bull from Pope Nicholas V., for the founding of a university, which he endowed. Before this period the town was so contemptible as not to contain more than 1,500 inhabitants; but the establishment of the university contributed more than anything which had hitherto been done to the extension of the city and the general well-being of the inhabitants. When, however, the royal burghs of Scotland were taxed by order of Queen Mary, it appears that Glasgow only rated as the eleventh in point of population and importance. Glasgow was occasionally the seat of the ecclesiastical synods of the church. The most remarkable of all these was that held in 1638, in the reign of Charles I., in which the Presbyterian party overturned the Episcopal system of the king, and asserted the perfect independence of "the kirk." To use the words of the historian Hume, "Episcopacy, the High Commission, the articles of Perth, the canons, and the liturgy were abolished, and declared unlawful; and the whole fabric which James and Charles, in a long course of years, had been rearing with so much care and policy, fell at once to the ground." On the 3rd September, 1650, Cromwell defeated the Scotch army at Dunbar; and in the course of the winter the Protector visited Glasgow. His stay in Scotland was in the main extremely beneficial to the country, and to Glasgow in particular. Great part of his troops consisted of tradesmen, who had been spirited away from their peaceful callings by the frenzy and enthusiam of the times: a number of these settled in Glasgow, and contributed to foster the spirit of trade, and bring the arts to a degree of perfection to which the citizens had been strangers. On the 17th of June, 1652, a conflagration broke out in Glasgow, by which the greater part of Saltmarket, Trongate, and High-street was destroyed. The loss was computed at £100,000—no inconsiderable sum in those days; but, like London in a similar affliction, Glasgow rose purified and beautified from her ashes. The majority of the houses had hitherto been built or faced with wood, but these now gave place to substantial stone erections. Subsequently, in 1677, another great conflagration took place, when 130 houses were burned. Charles II. followed up the wretched policy of his father in his efforts to force

Episcopacy upon a reclaiming people; and as Glasgow was the head-quarters of "the Covenanters" of the West, it shared in all the pains and persecutions of that iron time. To aid their proceedings, the Council brought down upon the Lowlands an army of nearly 10,000 Highlanders, known afterwards by the name of "the Highland host," who seared the face of the country like a cloud of locusts, and after a stay departed from Glasgow loaded with plunder. The Act of Union of 1707 was so bitterly opposed by the citizens of Glasgow, that the magistrates found it necessary to order that not more than three persons should assemble together in the streets after sunset. But only a very short period elapsed before the citizens saw the advantages which had been conferred upon them by the opening of the American trade, which they embraced with a degree of ardour which justifies us in regarding this as the epoch from which must be dated the rise of Glasgow as the great seat of commerce and manufactures in Scotland. In the course of the long war which broke out during the first French revolution, which was terminated by the overthrow of Napoleon in 1815, Glasgow evinced an exuberant degree of loyalty, in the number of its corps of royal volunteers. In 1819-20, the peace of the city was endangered from the feeling of discontent which prevailed in the minds of large masses of the working classes, who in many cases had arrayed and armed themselves with the intention of openly resisting the Government. Since then, the history of the city is happily unmarked by warlike preparations, or disaster, if we except the visitations of the cholera in 1832 and 1848-9, and the brief outburst of a thoughtless rabble in 1848. Its annals, however, are not the less interesting that they belong to the piping times of peace; for they mark the almost railroad speed with which the capital of the West has progressed in population, in intelligence, and in commercial and manufacturing wealth.

General appearance.—Unlike Edinburgh, and many other towns in the kingdom, Glasgow appears very disadvantageously from a distance. In the majority of its approaches, the first intimation which a stranger has of his vicinity to a great city, is the innumerable cluster of tall brick chimney stalks, vomiting volume on volume of dark smoke, and imparting to the suburbs an air of dinginess. The ground on which the city and suburbs are built consists, generally, of a long level tract

on both banks of the Clyde, rising to the north, however, to a considerable altitude. On this ridge is situated the Cathedral, which may be considered the nucleus of the city, and from it the streets have branched south towards the river. The High-street leads from the Cathedral, and terminates at the Cross, where the Trongate extends to the west, and the Gallowgate to the east. The Trongate, which a little further west takes the name of Argyle-street, is one of the most spacious streets in Europe; and generally presents an air of business activity which bears resemblance to what is daily seen on the long line of street leading from Ludgate-hill, along Fleet-street and the Strand, to Charing-cross, in London. Gallowgate, Trongate, and Argyle-street extend more than two miles, in an almost uninterrupted line, and on each side are lined with spacious shops, extensive warerooms, and dwelling-houses above. From the centre portion of this long line some of the finest business-streets in the city extend to the north, including the offices of the majority of the banking companies, the counting-houses of the foreign merchants, the warerooms of the manufacturers, and the offices of gentlemen connected with the law. Parallel with Argyle-street, and extending to the westward, are some spacious streets, chiefly occupied with the dwelling-houses of the more respectable classes of the citizens. Of these George-street, Regent-street, and Bath-street may be named. They lead to the patrician locality of the Blythswood-grounds, where are situated Blythswood-square, Elmbank-crescent, Woodside-crescent, &c., which are built and laid out with a degree of magnificence worthy of the merchant-princes of the West. This is called the new part of the town; and, with the exception of Moray-place, in Edinburgh, and some of the squares in London, the crescents and square we have named are unsurpassed in architectural beauty and unity. Jamaica-street forms the *vena cava* of two-thirds of the traffic from the Broomielaw, and is constantly crowded by carts, wagons, noddies, and omnibuses, which take this route on their way from the harbour to their different destinations in the city and suburbs, or *vice versâ*. The Broomielaw, or harbour, extends to the west from the foot of Jamaica-street, and ships of large tonnage are brought up to within a few yards of Glasgow Bridge. The peep down the river from the centre of this noble bridge is one of the most animating which can possibly be conceived. It is unnecessary

to enter into the more topographical arrangements of the city minutely, as the reader will learn more from consulting the plan of Glasgow inserted in the present work, than from any description on our part.

There are three suburbs connected with Glasgow, of great extent, and which, for all the purposes of commerce and manufacture, and so far as community of interest is concerned, are one and indivisible with the city. Gorbals, which is the most extensive, lies on the south bank, and is separated from the city proper by the Clyde; but Calton and Anderston, the former on the east, and the latter on the west, are so intermingled with the city that few beyond the local tax-gatherer either know or trouble themselves about the exact boundaries. All of them, till lately, had a distinct magistracy, and separate and independent police jurisdiction. In 1845, the gross number of houses and other possessions was 65,028, and the rental £866,150. In 1850, the number of possessions was 76,034, and the rental £1,017,362; showing an increase, in five years, of 11,006 possessions, and of £151,212 of rental. In 1800, the streets and roads within the parliamentary bounds of the city extended to thirty miles; at present the formed and paved streets alone extend to ninety-six miles. In 1800 there was little or no sewerage in Glasgow. At present there are forty miles of main sewers, twenty-one of which have been formed during the last six years, at a cost of £1200 per mile. Prior to 1806 Glasgow depended for its water supply on twenty-nine public wells, a few private pumps, and a spring at Willowbank, from which water was carted to the city and sold from door to door. There are now three water companies, which send 11,000,000 gallons of water into Glasgow every day. The first gas-light company was instituted in 1817. The streets, bridges, and harbour are now entirely lighted with gas; gas-light alone is used in shops, warehouses, and factories; in private dwelling-houses gas is used to a greater extent than in any other town we have visited. The quantity of gas annually consumed (not including the gas made at one public work) amounts to 441,000,000 cubic feet. While thus much has been stated of the sunny portion of Glasgow society, it is only fair to present the dark side of the picture. This city, like Dublin, embraces to a remarkable extent the very extremes of wealth and misery; and the most painful feature in the case is that in pro-

portion as the one class appears to be advancing in opulence, the other appears to be receding towards a state of abject and helpless wretchedness. The closes leading from the High-street, and the wynds, are known to contain an aggregate of misery, disease, and vice, which is perhaps unequalled, certainly not exceeded, by that of any other city in the empire. The district in which the wynds are situated lies in the very heart of the city, and here fever is ever present,—at times breaking out with frightful virulence, and permeating all classes of society. The population of these places is not usually Glasgow-born, but the locality affords a shelter and nestling-place for all that is low and squalid, come from what quarter it may. The great majority of the tenants of these dens are Irish, who, from the facilities now afforded by steam navigation, are induced to fly from wretchedness in their own country to a state of things little better in the land of the stranger.

The Clyde; the Broomielaw; the Shipping; and the Bridges.—So much of the well-being of Glasgow depends on the Clyde, that if the river had not been improved, the city could not have advanced. Never surely was a river more important to a town; and never did townsmen labour more untiringly to make their river a great highway for shipping. The commercial history of the Clyde is more remarkable for great results from small beginnings, than any other river in Britain.

If the Clyde had been deeper, Glasgow might have had a great shipping trade at an early period; but the shallowness of the river below Glasgow caused Greenock to be made an emporium of trade, at the expense of Glasgow. As early as the year 1556, there is said to have been an agreement made, whereby the inhabitants of Glasgow, Renfrew, and Dumbarton undertook to labour on the river for six weeks alternately, to improve the communication from one town to another. The Glasgow merchants had their shipping port as far off as Cunningham in Ayrshire; but in order to lessen the distance to their port, they negotiated with the magistrates of Dumbarton, in 1653, for the purchase of ground for a harbour and docks. Dumbarton and Troon both rejected the advances of Glasgow, apparently from a timorous and niggardly policy. The Glasgow merchants were not to be foiled. They purchased thirteen acres of

ground a little above Greenock, and formed a town and harbour, to which they gave the name of Port Glasgow: this occurred in 1662. Before the end of the same century a small landing-quay was formed at Glasgow itself, being the first approach towards a harbour.

The eighteenth century witnessed a sort of contest for superiority between Greenock and Glasgow. The former town was only a mean fishing-village in the beginning of the seventeenth century; but it gradually advanced as a shipping town during that century. In 1707, by the public spirit of some of its inhabitants, a harbour was formed at Greenock, which was larger and more important than any constructed in Scotland up to that time. Greenock is admirably situated with regard to the sea, being close to the mouth of the Clyde; and as soon as the Glasgow merchants had embarked in the Virginia tobacco-trade, the Greenock ship-owners took their full share in the proceedings. Had the Clyde been allowed to remain in its original state, Greenock would have continued in the supremacy as regards foreign trade; but the people of Glasgow naturally wished to make their town not merely commercial, but maritime. Having received the advice of Smeaton and other engineers, they constructed, in 1775, upwards of a hundred jetties, at different parts of the river, whereby the effective width was lessened, the rapidity of the stream increased, and the bottom scoured out to a greater depth. The quay which had formed the "Broomielaw," or harbour, was lengthened in 1792 by 360 feet, and in 1811 by 900 feet.

Still, notwithstanding these works, Glasgow could only receive small vessels called "gabberts," of 35 to 45 tons, up to the Broomielaw, by the beginning of the present century; and there are still living a few persons who remember seeing the harbour without a single vessel or boat in it of any description. The Clyde Trustees, however, kept steadily in view the progressive improvement of their harbour; and the result has been wonderful. The trustees consist of some of the most influential men in the city, in part *ex officio* and in part elected. By deepening and deepening year after year, the bed of the river had been so far changed that by the year 1821 vessels drawing 13 feet of water could come up to the Broomielaw or Quay of Glasgow. Still this did not suffice: it was desirable that vessels of 700 or 800 tons' burthen should be able to load and unload at the

quay; and to effect this it was necessary to carry the depth still greater. By 1841, the quay space had reached a length of 3,340 feet on the north shore, and 1200 feet on the south. At the present time the depth of the river close to the bridge has actually reached 18 feet at high water; the north quay now extends to a length of 4,900 feet, and the south quay to nearly as great a length; while further additions are contemplated to both; and the whole way down the Clyde, from Glasgow to Dumbarton, the bed and banks of the river are as carefully attended to as in a ship-canal. For the first seven miles of this distance the sloping banks are actually formed artificially of blocks or slabs of whinstone, placed almost as regularly as in ashlar work.

It is impossible to walk along the banks of the Clyde without being struck with the disproportion between its width and the magnitude of the traffic on it. The river is certainly not a broad one, but rarely has there been seen one more busily occupied. The large vessels anchor at Greenock till a favourable time of the tide arrives, when they ascend the river up to Glasgow Bridge. For the first mile or two below the bridge, the shipping is wedged in so closely as to leave room only for a passage up and down; and there are times when the vessels are ranged nine tiers in depth, off both south and north quays. An ever-active and exciting scene presents itself in this harbour. Imports and exports, passengers and goods, divide it between them. The eastern part of the north quay, next to Glasgow Bridge, is occupied by the small river steamers, which run up and down to Dumbarton, Greenock, Rothsay, &c.; the next, or central part of the same quay, is mainly appropriated to sailing vessels which arrive with import goods, and which discharge their cargoes at the quay; while the western extremity is left for the large steamers, which ply to Liverpool, Dublin, Belfast, &c. The southern quay is almost wholly occupied by vessels loading with export goods, seven-eighths of the export trade of Glasgow being conducted on this quay.

Each portion of quay has its own series of pictures. The little steamers are swift rattling craft, which run up and down the river at a marvellously cheap rate, and carry their loads of human beings all day long. The import ships, and sheds placed along the quay in front of them, exhibit a countless array of the treasures of foreign climes,

brought from every part of the world. Cotton in one ship, tea in another, sugar, indigo, drugs, silk, timber, sulphur, guano—all are brought up on the open quay; and there is perhaps no place in the kingdom where the modes of packing and unlading and stowage are more easily observable than here. Then, further down, we come to the large steamers: the extremes of splendour and of wretchedness; the gorgeous floating palaces which go to Liverpool, and the huge black-looking receptacles that bring over the destitute Irish.

The trade of the Clyde has in every point of view increased in a wonderful degree within the last few years. It is calculated that the accommodation for traffic in the river is now seven times as much as it was in 1810; and the traffic has increased still more than the accommodation. The shippers are always treading on the heels of the quay builders. Even within the last few years the Clyde Trustees have purchased many thousand square yards of ground on the south side of the river, for the formation of basins and docks. When it is stated that 80,000 tons of iron, and 130,000 tons of coal, on an average of the last four or five years, are exported from the Broomielaw annually, it will be obvious that a very busy scene of traffic must be presented by these two commodities alone. The river trustees had spent considerably more than a million sterling in improving the river, down to the year 1846! A quay wall, nearly a third of a mile long, has been lately constructed, west of Glasgow Bridge; the wall and connected improvements give a depth of 20 feet at low water, thus enabling vessels laden, of the largest size, to lie afloat at all times of the tide. The revenue derived from the river and harbour, which in 1820 amounted to £6,000, had, in 1847, reached more than nine times that sum. The Customs' duty, which in 1812 was only £3,154, amounted to thirty times that sum in 1833, and to nearly two hundred times that sum in 1845. The ships which were owned by Glasgow houses in 1820 amounted to 77, with a tonnage of 6,000 tons; by the year 1846 they had reached the number of 512, with a tonnage of 135,000 tons. The burthen of the vessels which arrived and departed at Glasgow in 1820, was 160,000 tons; in 1846 it was 1,120,000 tons. These comparisons will tell more than can be told by long details, of the commercial advancement of the Clyde.

The bridge, *par excellence*, is Jamaica or Broomielaw or Glasgow

Bridge—for it is known by all these names, on account of its fine proportions and construction, and of its contiguity to the harbour, it being the lowest bridge on the Clyde. But it is not the most ancient. Stockwell Bridge, or the "old bridge," dates from the fourteenth century, but it was then only twelve feet wide; and it is curious to think of the mode in which increased width was given to it. Ten feet of additional width was given to it about seventy years ago; and about thirty years ago Telford suspended two ornamental iron foot-paths at the sides, overhanging the water in a very ingenious manner. This was the only bridge at Glasgow for more than 400 years. After repeated enlargements, it was at length pulled down, and on its site a splendid bridge erected, of five arches, named after our present sovereign.

VICTORIA BRIDGE OVER THE CLYDE.

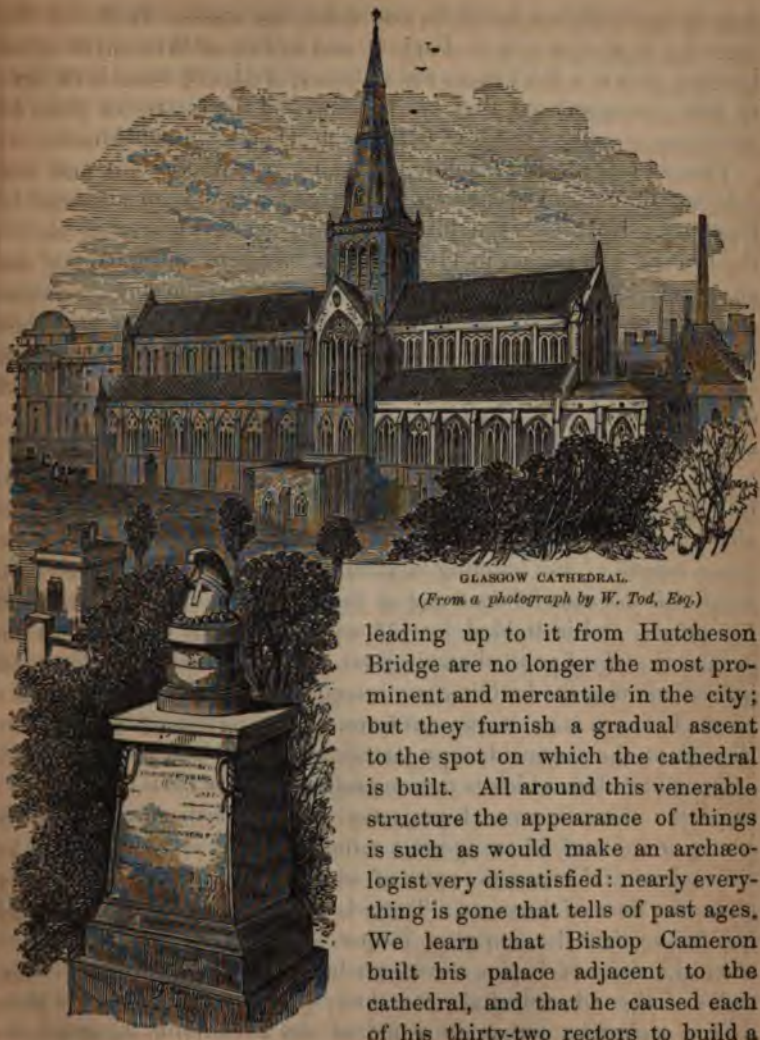
In 1768 the Jamaica-street Bridge was built; but in 1833 it was replaced by Telford's fine bridge, which is sixty feet wide, and one of the most beautiful in the kingdom. As the principal part of Glasgow is

north of the river, while the export quays are almost wholly on the south, the traffic across this bridge is scarcely equalled by anything in Britain, out of London. Before the removal of the old Jamaica Bridge, a handsome timber bridge was built a little above it. In the place of this structure a fine suspension bridge has been erected. Hutcheson Bridge is a plain structure in a line with the High-street and the Salt-market. The fourth bridge we have named, Rutherglen Bridge, is so far to the east as scarcely to come within the limits of Glasgow.

Steam-vessels.—To Glasgow truly belongs the merit of being designated the cradle of British steam-navigation. It is not the province of this work to inquire into the claims urged in favour of Mr. Miller, of Dalswinton, Mr. Symington, of Falkirk, or Lord Stanhope. Suffice it to say, that Mr. Henry Bell was the first person who successfully applied steam to the propelling of vessels against wind or tide. In 1811, the Comet was built by Messrs. John Wood and Company, Port Glasgow, according to the directions of Mr. Bell; and on the 18th January, 1812, the vessel which had been named the Comet plied from Glasgow to Greenock, making five miles an hour against a head-wind. The engine was only of 3-horse power; yet the experiment was sufficient to prove the vast results which might be obtained by it, and as Mr. Bell either had not the means, or was too simple-minded, to take out a patent, the invention was speedily copied on a most extensive scale, and others reaped the golden harvest—blamelessly we admit—which Mr. Bell had sown. In fact, it will be remembered, to the lasting shame of our country and the age, that while Fulton, in America, was loaded with wealth and honours, Bell was compelled to drag out a life of penury, upon a pittance of £50 per annum, granted by the generosity of the river-trustees. The larger boats—especially those plying between Liverpool and Glasgow—are in reality floating palaces, having cabins fitted up at vast expense, and with every regard to grace and architectural beauty. All of them are powerful boats.

Ecclesiastical Buildings. — The cathedral is the kernel from whence Glasgow has sprung; and to the cathedral must be given the first share of our attention in describing the Glasgow of present times. Both spiritually and tangibly, the town spread from that hilly *spot* on which the cathedral stands.

It is in truth a commanding position for a cathedral. The streets



GLASGOW CATHEDRAL.
(From a photograph by W. Tod, Esq.)

leading up to it from Hutcheson Bridge are no longer the most prominent and mercantile in the city; but they furnish a gradual ascent to the spot on which the cathedral is built. All around this venerable structure the appearance of things is such as would make an archæologist very dissatisfied: nearly everything is gone that tells of past ages. We learn that Bishop Cameron built his palace adjacent to the cathedral, and that he caused each of his thirty-two rectors to build a manse near it, in which he was to reside. If we now look for the palace, or for the thirty-two houses, or for the numerous other buildings which must have environed such

a spot, we shall have but little return for our search. It is true that there are in Rotten-row, in Drygate, and in two or three other neighbouring streets, a few houses whose history evidently dates back three or four centuries; yet they are too few, and the history of them too uncertain, to tell us much of Glasgow in its archiepiscopal times.

The old cathedral has maintained its integrity wonderfully well, considering the stormy scenes which Church matters have witnessed in Scotland. If McUre, the historian of Glasgow, is correct in placing the time of its erection in 1136, it is a monument well worthy of our attention; but it is at the same time evident, from the prevailing character of the architecture, that repeated additions and alterations were made in subsequent centuries. The original plan does not seem to have been fully carried out; for notwithstanding the successive additions made to it, the building still wants some of the elements of a complete cathedral.

The "High Kirk" (the Glasgow inhabitants more frequently use this appellation than "cathedral") is built upon a plot of ground about a hundred feet above the level of the Clyde. The greatest internal length of the building is about 320 feet; the breadth 63; the height of the nave 85 feet, and of the choir 90. It is supported by 147 pillars, and is lighted by 157 windows; many of which, in the decorated style of pointed architecture, are of great beauty. There are indications that the building was intended to have had the form of a cross; but such is not its present form. It has no transepts; or rather, there is on the south side a projection which was long used as a place of sepulture, but which is now conceived to have been intended as a transept: there is no such projection on the north side. From the centre of the roof, where in most cathedrals the "crossing" would be, rises a beautiful tower, the spire of which has an altitude of 225 feet above the floor of the choir. There is another tower rising to a much less height than the central or proper tower. After the Reformation, when the form of Divine service no longer required the magnificent vistas of the old cathedrals, the choir, or eastern division, was alone used as a church; but as the wants of the Protestants increased, the western division, or nave, was also fitted up as a distinct church. The two churches thus formed obtained the names of the Inner and the Outer High Churches. By the erection of a new church in another

part of Glasgow, this employment of the nave of the cathedral was afterwards dispensed with.

Glasgow Cathedral is the only existing specimen of that kind of sacred structure still used and in good condition in Scotland, excepting that of Kirkwall, in the Orkneys; all the others were more or less mutilated or destroyed at the Reformation. Scott puts into the mouth of the shrewd old Andrew Fairservice, who accompanied Francis Osbaldistone to the cathedral, a speech on this subject, which has as much truth as oddity about it. "Ah! it's a brave kirk—nane o' yere whigmaleeries and curliwurlies and open steek hems about it—a' solid, weel-jointed mason-wark, that will stand as lang as the warld, keep hands and gunpowther aff it. It had amaist a douncome lang syne at the Reformation, when they pu'd down the Kirks of St. Andrew's and Perth, and thereawa', to cleanse them o' Popery, and idolatry, and image worship, and surplices, and sic like rags o' the muckle hure that sitteth on seven hills, as if ane was na braid eneugh for her auld hinder end. Sae the Commons o' Renfrew, and o' the Barony, and the Gorbals, and a' about, they behoved to come into Glasgow ane fair morning, to try their hand on purging the High Kirk o' Popish nicknackets. But the townsmen o' Glasgow, they were feared their auld edifice might slip the girths in gaun through siccan rough physic, sae they rang the common bell, and assembled the train-bands, wi' tock o' drum. By good luck, the worthy James Rabat was Dean o' Guild that year (and a good mason he was himsell, made him the keener to keep up the auld bigging): and the trades assembled, and offered downright battle to the Commons, rather than their kirk should coup the crans, as others had done elsewhere. It wasna for luve o' Paperies—na, na! nane could ever say that o' the trades o' Glasgow. Sae they sune came to an agreement to take a' the idolatrous statues o' sants (sorrow be on them) out o' the neuks. And sae the bits o' stane idols were broken in pieces by Scripture warrant, and flung into the Molindinar burn, and the old kirk stood as crouse as a cat when the flaes are kaimed aff her, and a' body was alike pleased. And I hae heard wise folk say, that if the same had been done in ilka kirk in Scotland, the Reform would just hae been as pure as it is e'en now, and we wad hae mair Christian-like kirks." Worthy Andrew then makes a very disrespectful allusion to the churches which existed in Scotland in his day; but if he could

see things as they now are, he would find that a surprising number of fine churches have been built within the last few years.

One of the most interesting portions of Glasgow Cathedral is the crypt, which runs in solemn grandeur beneath the choir. As the body

THE CRYPT, GLASGOW CATHEDRAL.

of the building itself had been cut up into two churches to meet the wants of the inhabitants, so was this crypt brought into requisition for a similar purpose. During the reign of Queen Elizabeth, a portion of Glasgow was erected into a separate and distinct parish, to which the name of the Barony was given; and as there was no church belonging to this parish, the crypt of the cathedral was fitted up as a church, which bore the name of the Barony Church. The readers of "Rob Roy" will recollect that one of the incidents of that tale was made to occur in this subterraneous church, and that Sir Walter Scott describes the place in the following way:—"Conceive an extensive range of low-browed, dark, and twilight vaults, such as are used for sepulchres in other countries, and had long been dedicated to the same purpose in this, a portion of which was seated with pews, and used as a church. The part of the vaults thus occupied, though capable of containing a

congregation of many hundreds, bore a small proportion to the darker and more extensive caverns which yawned around what may be termed the inhabited space. In those waste regions of oblivion, dusty banners and tattered escutcheons indicated the graves of those who were once, doubtless, 'Princes in Israel.' Inscriptions which could only be read by the painful antiquary, in language as obsolete as the act of devotional charity which they implored, invited the passengers to pray for the souls of those whose bodies rested beneath." The crypt was thus appropriated down to so late a period as 1801, when a new church was built for the congregation elsewhere. This curious underground place consists of a dense colonnade of short pillars, which support low arches; and is as unthankful a place for a preacher to pour forth his voice in as can well be conceived. The length is 108 feet, the breadth 72 feet; it is supported by 65 pillars, many of which measure as much in circumference as in height—viz., 18 feet. A dim light enters in from about forty small windows. Mr. Rickman estimates the architectural merits of this crypt very highly: he says that it "is not equalled by any other in the kingdom; the piers and groins are all of the most intricate character, the most beautiful design, and excellent execution."

Though the over-zealous Reformers of the sixteenth century did not seriously despoil the cathedral, yet the mutations of later taste, and the slow but surely-working hand of time, have greatly disfigured it in many parts; and it has been an object of solicitude to restore this fine old building to something like its former appearance. Very extensive alterations have been effected in the cathedral of late years; those of the choir more particularly, completed under the direction of Mr. Matheson, of Her Majesty's Board of Works for Scotland, have been very successful.

The Bishop's Palace, or Castle, which for ages stood near the cathedral, was pulled down fifty years ago. The other churches of the city, with one exception, are not old enough to be venerable, and too much like other modern churches to claim any particular attention. The Barony Church, situated near the cathedral, and built to accommodate the congregation which before occupied the crypt, is a very tasteless affair. The larger among the modern churches, such as St. Andrew's, St. Paul's, St. George's, St. John's, St. Enoch's, &c., are for the most part handsome and good-looking structures. The steeple of

the Tron Church, or, as it is often called, the "Laigh," or Low Kirk, in contradistinction to the cathedral, or "High" Kirk, is one of the

INTERIOR OF GLASGOW CATHEDRAL.

most conspicuous objects in the Trongate; this was one of those Scottish churches whose altars were pulled down in 1592, in conformity with the Council-order to "pure the kirk of all kynd of monements of idolatrye." It was burnt down by accident, and immediately rebuilt, about fifty years ago. The Roman Catholic Church, on the north bank of the Clyde, is one of the largest and finest modern churches in Scotland. Eighteen years ago, before the Free Church agitation began, there were no fewer than eighty-six churches and chapels in Glasgow, containing sitting accommodation for nearly a hundred thousand persons. The number must now be greatly increased, as will be evident to any one who is familiar with the recent

course of church discussions in Scotland. In 1778 a Gaelic chapel was opened in Glasgow, where the Highlanders might hear service in their own language. There are now three Gaelic chapels.

The Glasgow Cathedral Windows.—The decoration of the venerable cathedral by means of stained glass continues steadily to progress. We, in April last, had the pleasure of witnessing the latest addition to the series, in the shape of the fine window presented by the Duke of Buccleuch, being inserted by Mr. David Keir, the skilled workman under whose charge nearly all its predecessors have been fitted up. It is from the Munich factory, and superior to most productions of its class that we have seen. The subjects of the four cartoons are taken from the 15th chapter of St. Luke's Gospel. The first is a design from the words—"Rejoice with me, for I have found my sheep which was lost;" the second illustrates the text—"There is joy in the presence of the angels of God over one sinner that repenteth." The other two are simple but effective compositions from the parable of the prodigal son,—one showing the prodigal resolving that he will arise and go to his father; the other depicting the meeting of parent and child, when the still fond father ran out to meet his repentant erring one, and "fell on his neck and kissed him." Underneath each of the cartoons is an heraldic shield, with the arms, titles, and other insignia of successive representatives of the ducal family of Buccleuch. These are in order—"Francis, Duke of Buccleuch;" "Charles William, Duke of Buccleuch and Queensberry;" and "Francis, Earl of Dalkeith." In a circle at the top of all, the various orders belonging to the family are brought into one composition. If the work of ornamentation is continued throughout in a manner corresponding to what is already done, few more beautiful temples will be found in our country than the cathedral of the good Sanct Mungo.

That beautiful and ever-admired structure, Glasgow Bridge, is undergoing, we are happy to see, a thorough washing and scrubbing, preparatory to the bright days of summer. By means of a liquid composition, applied by mop and brush to the parapet, the begrimed granite is restored to all its native purity and beauty.

Public Institutions and Buildings.—The *University* of Glasgow was established in 1450, by William Turnbull, bishop of the diocese, who at the request of James II., obtained from Pope Nicholas V. a bull

erecting in Glasgow a *studium generale* in theology, canon and civil law, the liberal arts, and every other lawful faculty, with the power of

granting degrees. At first there were no buildings connected with the University, but, as it advanced in importance, the bishop and chapter granted the use of a building near the cathedral. In 1577 James VI., by advice of the regent Morton, framed a new constitution for the University, and made a very considerable grant to the revenues. The charter granted at this period constitutes the basis of the present constitution. The academic body of the University consists of a lord-chancellor, a lord-rector, a dean, a principal, the professors, and lecturers. The lord-chancellor is the officer of highest dignity in the University, and is elected by the *Senatus academicus* for life: at least this has been the practice since 1692. The office, which is therefore almost entirely an honorary one, is now, and has been long, held by the head of the ducal house of Montrose. The next officer is the lord-rector, who is invested with very considerable powers, and is the guardian of the statutes, privileges, and discipline of the University. The lord-rector is annually elected by the dean, principal, professors, and matriculated students. The office of principal is almost coeval with that of the University, and the appointment is vested in the Crown. He must be a minister of the Church of Scotland. The pre-

fessors are classed in four faculties, viz., arts, theology, law, and medicine, and are further divided into College professors and Regius professors. The University library, founded in the fifteenth century, now contains upwards of 60,000 volumes. A botanical garden, for the use of the lecturer in botany, was prepared in 1753; but having become inadequate, a more extensive garden was formed in the north-west suburbs in 1818; and the institution has since been removed still further to the north-west of the city. The *Hunterian Museum*, founded by the well-known Dr. William Hunter, occupies a handsome modern building, situated immediately behind the University. An observatory is situated in the College-park; but as this has been found insufficient for astronomical purposes, a fine new erection has been built on an eminence in the west suburbs of the city. The University buildings are situated on the east side of the High-street. They consist of five quadrangles or courts—two where the hall and class-rooms are situated, one in which are the museum and library, and two in which are the houses of the principal and College professors, amounting in all to thirteen.

The *Andersonian University*, founded in 1795-6 by Mr. John Anderson, Professor of Natural Philosophy in the University of Glasgow, is more immediately superintended by eighty-one trustees, who are elected by ballot, and remain in office for life, unless disqualified by non-attendance. The subjects taught at the present time are natural philosophy, chemistry, natural history, logic and ethics, mathematics and geography, Oriental languages, drawing and painting, anatomy, theory and practice of medicine, surgery, materia medica, medical jurisprudence, veterinary medicine, and German and modern literature. The professors are all men of ability; and the popular system of their prelections, with the moderate nature of the fees, attracts a numerous band of students.

The *High School*, or Grammar-school, as it used formerly to be termed, is one of the most ancient educational institutions in the city, dating its foundation anterior, it is believed, to the institution of the University. The course of tuition now embraces Latin, Greek, English grammar, composition, elocution, French, Italian, German, writing, arithmetic, geography, &c. The school is under the management of a committee of the town council, aided by the advice of the clergy for the city, and the professors of the University.

The *Mechanics' Institute* was founded in 1823, by the mechanics of Glasgow, for the purpose of disseminating knowledge or scientific and other subjects. Lectures have been given on natural philosophy, chemistry, popular anatomy, physiology, phrenology, &c., the terms for the course seldom exceeding 10s. In 1831, commodious premises were built for the institution in Hanover-street.

The *Normal Seminary* was erected in 1837 by the Glasgow Educational Society, for preparing teachers to practise the system of moral, intellectual, and physical training pursued by the society. The seminary is situated at Dundas vale, and forms a prominent object in the north-west approach to the city. Attached to the buildings are spacious play-grounds; and the interior is divided into a series of large and commodious class-rooms, for carrying on the various departments of the educational system followed in the institution. The model schools are accessible to the children of all religious denominations, at a very moderate fee; and the Normal Seminary is equally open to students of every religious sect.

The *Royal Infirmary* was opened for the reception of patients on the 8th December, 1794. It is situated immediately adjoining the Cathedral. It is wholly supported by voluntary contributions; and is attended by a great number of the medical students of the University. In addition to the Infirmary, there are several other institutions in the city of a similarly charitable nature.—The head-quarters of the Glasgow poor is in the *Town's Hospital*, formerly contained in a sombre-looking building in Clyde-street, on the banks of the river, but now removed to the old lunatic asylum to the north of the city. When the hospital was instituted in 1733, the sum assessed upon the inhabitants was only £250; in 1763, £400; in 1773, £336; in 1793, £1,610; in 1803, £3,940; and it has gone on gradually to increase, varying however in amount, according to the exigencies of the times. In 1850 it was £47,787 for the old burgh of Glasgow alone; and £80,000 within the parliamentary boundaries of the city. Prior to the close of last century, such an occurrence as a person being buried at the public expense was almost unknown; in 1848 there were 4,042 pauper burials, and in 1849 there were 3,577. In 1849 no less than 26 per cent. of the funerals were defrayed by parochial or other charitable funds. This indicates a fearful growth of pauperism keeping pace

with the advance of the city in material wealth.—The most magnificent charity established by private benevolence in Glasgow, and similar to Heriot's Hospital in Edinburgh, is that founded by two brothers, George and Thomas Hutcheson, in 1639-41. The sum annually dispensed by the patrons amounts now to nearly £3,000 per annum, which is appropriated towards the support of a number of old men and women, and to the clothing and educating of the sons of decayed citizens. The hospital is a fine hall or building in Ingram-street, erected in 1803, with an elegant spire, and a school adjoining.—Besides these, there are a number of other "mortifications"—as they are termed in Scotch law—which dispense from £50 to £500 per annum: and several of the Scottish counties have charitable societies in the city, composed of gentlemen from the respective districts or connected with them, and intended for the relief of countrymen who may be in Glasgow in indigent circumstances. Many years ago it was calculated by Dr. Cleland, upon minute data, that £104,360 were annually dispensed in public and private charities throughout the city, independently of the suburbs.

The old *Lunatic Asylum* is situated on a commanding position to the north of the city. It consists of an octagonal centre, from which diverge four wings of three stories each, and from the centre rises a majestic dome. The directors, in December 1840, disposed, as we have stated, of the buildings and part of the grounds to the directors of the Town's Hospital, for the accommodation of the inmates of that institution; and purchased for the site of a new asylum between sixty and seventy acres of ground, three miles to the west of Glasgow, on which a very extensive asylum has been erected. The Asylum for the Blind in Glasgow is an institution pre-eminently deserving of notice.—A *Gaol*, *Justiciary Court-house*, *Council-chamber*, and *Town-clerk's offices*, comprised in one large, square building, situated at the west end of the green, was built in 1810, at an expense of £35,000. The façade and portico are admitted to be beautiful specimens of architecture; but, unfortunately, within everything was found to be inconvenient and inadequate, and in 1840 commissioners were appointed for raising, by assessment to be distributed over a series of years, the sum of £40,000, to remove the council-chamber and town-clerk's and chamberlain's offices to a more central part of the city, and throw the whole of the

front of the present building into an extended court-house, with ample accommodation for witnesses. This new building has since been erected, and, in connexion with the *Merchants' Hall*, forms one of the finest architectural ornaments of the city.—In 1822-24, Acts of Parliament were obtained for building and maintaining a *County and City Bridewell*. The original plan was a rotunda and four radiating wings (exclusive of the Old Bridewell), but only three of the wings are completed. The total sum expended on the buildings up to this date has been £41,000. Glasgow Bridewell has confessedly become the model institution of the kind in the kingdom. The great principles at work here are separation and industry; and the aspect of the institution altogether, instead of being sickening and repulsive, is lightsome and cheering. The expense of each prisoner is about £5 per annum; but in years of plenty and cheapness, it has been so low as £2.—The *Police Buildings* were raised at an expense of £14,000, in 1825-6. The erection contains a fine square in the centre; one side is occupied as a court-hall; another as the hall of the commissioners; and the remainder is taken up with prisoners' rooms, cells, and the other apartments necessary for the officers of the establishment. The affairs are managed by a board, elected from each of thirty-five wards into which the city is divided, and of which the magistrates are members *ex officiis*.—The *House of Refuge* is a valuable institution, and almost a novelty of its kind in the kingdom. It is open for the reception of juvenile thieves, who may be willing to abandon their course of life, and accept of the blessings of an honest education. The design originated in a conviction—by no means confined to Glasgow—that by sending young rogues to gaol, the most infallible mode is taken to make *old* rogues of them. The building is situated on an elevated and healthy spot, and was first opened for the reception of inmates in February, 1838. On entering the house, a boy generally becomes bound an apprentice for three years to one of four trades taught within the walls, viz., weaving and winding, tailoring, shoemaking, and nail-making; and the day is divided between education and labour. There is ample scope within the grounds for recreation: and the inmates are not on any account permitted to have the most distant intercourse with their old associates.

Statues.—A statue of James Oswald is represented in the fol-

lowing engraving. There are several imposing monuments and statues in the city. An equestrian statue of William III., formed of metal, is placed on a pedestal in front of the Tontine-buildings, near the Cross. In 1806, an obelisk of freestone was erected on the Green to the memory of Lord Nelson. It is 144 feet in height, and was erected

STATUE OF JAMES OSWALD.
(*From a photograph by Lennie.*)

by subscription, at an expense of £2,075. In 1812, a marble statue of Pitt, by Flaxman, was erected in the Town-hall. In 1819, a fine bronze statue of General Sir John Moore, a native of Glasgow, was erected by subscription, at an expense of £4,000. It is situated in George's-square. In 1832, a bronze statue, in a sitting attitude, by Chantrey, was erected in George's-square, to the memory of the great James Watt. In 1837, a Doric column, surmounted by a colossal

statue, was erected in the same square, to the memory of Sir Walter Scott; and in 1844, a noble equestrian statue to the Duke of Wellington, by Marochetti, was placed in front of the Royal Exchange. In St. Vincent-place is an equestrian statue of the Queen, by the same artist.

EQUESTRIAN STATUE OF HER MAJESTY.

Banks.—In 1696, a branch of the Bank of Scotland was established in Glasgow; but the trade of the city was so insignificant that it was recalled for want of support in 1697. It again made a trial in 1731, but was again recalled. The Ship Bank, the first which originated in the city, was established in 1749. Since that period numerous banks and branches have sprung up, or been established; and in the large commercial and manufacturing community in which they are situated, it is not surprising that they should thrive. The banks or branches now in Glasgow are as follows:—Bank of Scotland, British Linen Company, City of Glasgow, Commercial Bank of Scotland, Royal Bank, Clydesdale Banking Company, Glasgow Union Bank, National Bank of Scotland, and North British Bank. A Provident or Savings Bank was opened in Glasgow in 1815. The buildings in which the business of some of the ordinary banks is carried on are in a style of great magnificence. The Chamber of Commerce was first projected by Patrick Colquhoun, Esq., then Lord Provost of the city, and subsequently well-known for his writings on the Political Economy of the Capital, and of the river Thames. The principal objects of the institution are the protection and encouragement of trade, and to keep a watchful eye on whatever may be supposed to affect the commercial interests of Glasgow and its neighbourhood. It is incorporated by royal charter, and the business is managed by a board of directors, thirty in number. There are also East and West India Associations in Glasgow, for the encouragement and protection of these trades.

Theatres, Barracks, &c.—The first theatre in Glasgow was a booth,

fitted up in 1752. The Dunlop-street Theatre was originally built in 1785, and the present structure in 1840. The taste for theatricals having increased, and a subscription having been set on foot, a magnificent theatre was opened in Queen-street, at an expense of £18,500. It was, however, much too large for the wants of the play-going community, and was burnt to the ground on 10th January, 1829.—Barracks for infantry were erected by Government in 1795, at the east end of the Gallowgate; and though the building may be a commodious one, it is far from being ornamental. Horse-barracks were erected at a later period on the south-west extremity of Gorbals.

Reading-rooms, Clubs, &c.—About 1770, a coffee-room was opened in Glasgow for the perusal of the newspapers and other periodicals; but its benefits were only confined to a few. In 1781, however, a subscription on the Tontine plan was entered into, for building a coffee-room and hotel; and a building was opened shortly after, near the Cross, the front of the hotel being supported by piazzas. The city having, however, rapidly grown in wealth, and business being on the move westward, the Royal Exchange, in Queen-street, was erected and opened in 1829, at an expense of £60,000. The great room is 130 feet in length, and 60 feet in breadth; the roof, which is supported by Corinthian pillars, is 30 feet in height. Newspapers and periodicals are received here from every part of the kingdom, the Continent, and America, and the hall is constantly crowded by merchants and others. The Glasgow Athe-

THE ROYAL EXCHANGE, GLASGOW.

næum, formerly Assembly Rooms, lies eastward. There are two clubs in the London style, viz., the Western and Union clubs. In addition to these, there are various reading-rooms throughout Glasgow of minor note.

The Green.—With the exception of "the parks" of London, there are few cities in the empire which can boast of such a fine arena for pleasure, health, and recreation as the Green of Glasgow. It embraces 140 imperial acres of fine grass land, extending along the north bank of the Clyde, and situated in the south-east portion of the city. It is a beautiful spot—level in the lower part as a bowling-green, and dotted in the upper by fine clumps of old timber. From the migration of the wealthier classes to the west end, the Green is no longer the resort of the gay and the opulent, as it used to be in times that have passed away; but it is still a centre of great attraction, especially in the heyday of summer.

THE GLASGOW CEMETERY.

The Necropolis, &c.—There are twenty burying-grounds situated in

Glasgow and the suburbs,—some of them set down in the very heart of the city, and in localities so crowded, that were it not for that Scottish feeling which repels any attempt to disturb the bones of the departed, their removal would be an act alike consonant to public taste and beneficial to public health. The oldest cemetery is that attached to the cathedral, and is no doubt coeval with the institution of the see itself. One of the most pleasing institutions connected with Glasgow, however, is the Necropolis—a burying-ground of recent institution, and laid out according to the plan of the celebrated *Père-la-Chaise* in Paris. Another extensive cemetery has been formed in the neighbourhood of Glasgow, on Sighthill, about a mile and a quarter from the Cross, on the road leading to Kirkintilloch. The Gorbals Cemetery has also been instituted on similar principles.

Olden Glasgow.—Dr. Strang, in his remarkably interesting account of "Glasgow and its Clubs," a work which has deservedly met with great success from the public, gives some details of the social condition of the city during the past and present centuries. Under the title of the "Glasgow Tobacco Aristocracy," he says:—

"If the world has had its ages of iron, silver, and gold, Glasgow also assuredly had, during even the last century and a half, its peculiar and distinctive mercantile ages. It had, for example, its salmon and herring, its tobacco, its sugar, its cotton, its iron, and its steam-boat building ages in regular progressive succession,—one peculiar business or handicraft generally holding for a season its paramount sway, and then calmly yielding the supremacy to another.

"Previous to the union of Scotland and England, the fish trade with foreign countries, carried on as it was particularly by Walter Gibson, who at one time was Provost of Glasgow, must be regarded as one of first-rate importance, when we consider the size and situation of the town, bringing the city, as it then did, into active commercial intercourse with France and Holland, and exchanging thereby the products of the Clyde for the luxuries of the Continent. After the happy compact—or *unhappy*, as it was regarded by many in Scotland at the time—was signed and sealed, which certainly linked more closely two otherwise rival commercial communities of the same isle, an immediate impetus was given to the commerce of Glasgow. The American Colonies, hitherto the exclusive field for English enterprise,

were opened to the merchants of the West of Scotland; and partnerships were at once formed, and vessels chartered, and thereafter built, for carrying on at first an extensive barter trade, and at length a regular commercial intercourse with Virginia, Maryland, and Carolina.

"Perhaps among the changeful peculiarities connected with the commercial chronology of Glasgow, there is none more extraordinary than the rise, progress, and decay of the Tobacco Trade, or of the lofty position in the social scale which the limited class of citizens engaged in that lucrative traffic so speedily attained and so soon lost. This trade seems to have originated about the year 1707, and was conducted on principles which could not fail to prove lucrative. The method for a considerable time of carrying on this business was to despatch with every vessel a supercargo, who, on arrival, bartered his goods for tobacco, and remained until he had either sold all his goods, or at least got sufficient tobacco with which to load his vessel, when he returned home with his cargo and any goods that were unsold. Each adventure in this way was at once closed, and the profit on the transaction was known and realized.

"The first vessel belonging to Glasgow which crossed the Atlantic was in 1718; and soon after the imports of tobacco became so considerable in the Clyde, as seriously to diminish the imports of the same article at the ports of Bristol, Liverpool, and Whitehaven. Frugality on the part of those who were early engaged in this traffic has been assigned for the success of the Glasgow Tobacco merchants; while, on the part of others, it has also been insinuated that not a little was due to the fact of the whole trade being cunningly conducted *in partnership with the Crown*, by which more was to be gained than can now possibly be done, in these days of stringent Excise and Custom-house *surveillance*. Be this as it may, it is at least certain that the English, when they found themselves smarting under the competition, brought forward this allegation of fraud on the part of the Glasgow importers of tobacco, to crush the trade in the West of Scotland; for we find that in the year 1721 the whole individuals engaged in this trade throughout England banded themselves together to effect this object, through the Government of the day; but for the honour of Glasgow, it is con-

solatory to know that all their evil endeavours proved ineffectual, and instead of being able to put down, as they hoped they would, the commerce so energetically maintained between America and Glasgow, their envious efforts only tended to increase and enlarge its power. In the year 1735 the Virginia merchants in Glasgow could boast of having fifteen large vessels, belonging to the ports of the Clyde, engaged in the tobacco trade, besides many others which they had chartered from other ports; and by the year 1750 they had a still greater number. The twenty following years may indeed be considered as the very hey-day or culminating point of the tobacco trade in Glasgow. During that period an unexampled extent of business in the intoxicating weed passed through the Glasgow merchants' books; and having there paid toll in the shape of profit, it was sent to all parts of the continent of Europe, and to not a few of the leading ports of England and Ireland. The fact is, that between the years 1760 and 1775, Glasgow became the great emporium for tobacco in the empire; for while the whole import into Great Britain in 1772 was 90,000 hogsheads, Glasgow alone imported 49,000!

"From the large extent to which this particular branch of business was carried on in Glasgow, it seems almost miraculous how a sufficient capital could at that period be found for it, either in the east or west of Scotland. In those days, however, the Virginia merchants, in making their export purchases, did not go, as foreign traders now do, with cash in hand, or with an acceptance to pay for them at a certain limited date; the only understanding between buyer and seller being, that on the return of the vessel which carried out the goods, payment would be made; and if any poor manufacturer or tradesman had the hardihood to ask for payment before the tobacco lord offered it, he could never again be expected to be favoured with the great man's custom. By adopting this very knowing plan of purchase and payment, it is quite plain that these tobacco-merchants traded chiefly on the capital of those from whom they bought their goods; but as the sellers were numerous and the purchasers few, the disadvantages to the one class from such a system were less felt than were the advantages to the other. For the goods purchased in the English markets such facilities could not be asked, nor, if they had been, would they have been granted. But to meet any want of capital then, the new

banks, established in the city by several of the leading tobacco lords themselves, were found ready to do the needful.

"During the period when this trade was in the ascendant, it is perhaps scarcely necessary to repeat what all the old historians of the city have told us, that the persons engaged in it ruled with a very high hand. With a *hauteur* and bearing, indeed, since altogether unparalleled, they kept themselves separate from the other classes of the town; assuming the air and deportment of persons immeasurably superior to all around them, and treating those upon whom they looked down, but on whom they depended, with no little supercilliousness. For one of the *shopocracy* or *corkocracy* to speak to a tobacco aristocrat in the street without some sign of recognition from the great man, would have been regarded as an insult. They were princes on the *Plainstanes*, and strutted about there every day as the rulers of the destinies of Glasgow. Like the princely merchants, too, who formerly paced the Piazetta in Venice, or occupied the gorgeous palaces in the Strada Balbi of Genoa, the tobacco lords distinguished themselves by a particular garb, being attired, like their Venetian and Genoese predecessors, in scarlet cloaks, curled wigs, cocked hats, and bearing gold-headed canes. How long this state of matters would have continued, had not the outbreak of the American war interposed to arrest this tobacco traffic, and to compel the traders to seek for employment and wealth in other channels, it is impossible to say. All we know is, that very soon after that event, the tobacco aristocracy ceased to lead, and the scarlet cloaks gradually disappeared from the pavement."

The appearance of Glasgow towards the close of the eighteenth century is very interesting:—

"Betwixt 1780 and 1795 the city had certainly very much increased in size, and the houses ('bating those of the tobacco lords) had been gradually increased in their dimensions. A manifest improvement, too, had become apparent in the exterior architecture; the streets and thoroughfares were rather better paved, and a commencement was made towards the modern luxury of sewers. A building company, during the course of five years from 1788, had expended no less than £120,000 on new tenements, and the example was soon followed by other wealthy citizens. There were still, however, a few of the houses on

each side of the Trongate which had roofs of thatch, while very many of those in Saltmarket and High-street had still fronts of wood. Along all the leading thoroughfares, proceeding from the Cross, one could still pace under piazzas, secure from rain and from sunshine, although there were already powerful efforts making to have the dingy shops brought out to the front of the street. In 1795, Hutcheson-street, Wilson-street, John-street, and George-square were known by the common appellation of 'the New Town,' as this quarter of the city then really was. Many of the most respectable inhabitants then lived in Charlotte-street, Stockwell, Jamaica-street, Saltmarket, and High-street. The high and mighty commercial *dons* generally occupied houses in Virginia-street, Miller-street, Queen-street, and Buchanan-street, and in the three squares, viz., St. Enoch's, George, and St. Andrew's; but, with the exception of the last, there was not a place of business in any one of those now bustling localities.

"St. Andrew's-square was at that time the great seat of manufacturing establishments, while almost no places of business were found farther west than Glassford-street or farther north than Ingram-street. With respect to retail shops, it may be truly said that not one of any note was situated to the west of Miller-street. As yet not a single private house had been built to the west or north-west of George-square; and between Madeira-court and Anderston, grass fields and gardens were all prevalent. Although the manufacture of articles in silver and gold was practised early in the city (since, by an Act of Council, William Cockburn, goldsmith in Edinburgh, was allowed to exercise his calling in Glasgow in 1660, and in 1716 a sum of £35 1s. 9d., sterling money, was given to James Luke, goldsmith, by the town for a silver tankard, &c., to be sent to Colonel William Maxwell, of Cardonell, for the good service he had done during 'the rebellion and confusion'), still, in 1790, there were, if we omit watchmakers' and those which might be properly designated jewellers' or goldsmiths' shops, only two at all notable in Glasgow, one of which was kept by Mr. Adam Graham, in King-street, and the other by Mr. Robert Gray, in Trongate; and, strange to say, the latter silversmith could, in addition to his more valuable wares, always furnish a customer with a cane or an umbrella—the latter luxury, though then a modern invention, being at that time generally made of yellow or

green glazed linen. These novelties were also very large, at first with the handle for holding them at top, while the reverse end was pointed with a brass point for touching the ground when walking; and secondly, with a ring at the top by which to hang them; and although they are at present found indispensable to the comfort of every Glasgow pedestrian, they were then only to be seen in the hands of a few of the more fashionable of the community. In addition to the two rather celebrated silversmiths mentioned, there was at that time a somewhat noted individual, yclept Angus M'Donald, who sold plated goods in great variety, and who besides eked out his business by the sale of tea and quack medicines, more particularly of the famous balm of Gilead. Of apothecaries' or druggists' shops there were, up to the latest time we are attempting to sketch, only two of any great celebrity, and these were kept by Mrs. Balmanno and Mr. Wright; for the other half-dozen small vendors of salts and senna, in Trongate, High-street, and Gallowgate, were of no note or character. The cloth shops, for the working classes and country people, were all on the south side of the Trongate, between the Laigh Kirk-close and the Cross, under what was usually called 'the pillars,' with a few stray ones about the head of the Gallowgate. For broad cloths, for the better classes, there were only three shops of note, and those were kept by Mr. William Aitken, Mr. Patrick Ewing, and Messrs. Millar and Ewing. The hardware shops were all on the west side of the Saltmarket, and amongst these was that of the well-known Mr. Jas. Lockhart, who was, perhaps, one of the very best specimens of the good old-fashioned morality of bygone times; while on the opposite side of the same street were located all the dealers in ready-made coarse shoes. There was then not a tailor's shop in the whole city, cutters of garments being confined to the upper flats or garrets of houses, and in their art giving little proof of much taste or acquaintanceship with the mysteries of Bond-street.

"From all that can be gathered on the surface of past society, it appears that trade rather than literature was about this time the peculiar characteristic of the now Western metropolis; and, as an illustration of this, it may be stated, that in 1793, as in 1709, there were only *two* circulating libraries in the city, the one belonging, as formerly hinted, to Mr. John Smith, in the Trongate, and the other

Mr. John Coubrough, in the High-street; the rather greasy *tomes* ich these well-known bibliopoles kept for the public use and truction, consisting chiefly of such novels and romances as were erwards known under the appellation of the 'spawn of the Minerva ss.' No doubt the student had always the College library to resort while, from 1791, the public had access to the valuable stock of e and curious books which Mr. Walter Stirling had bequeathed for benefit of his native city.

"The quidnuncs of the day, although eager and somewhat violent liticians, had been, nevertheless, for a long period content with three al newspapers—the *Journal*, the *Mercury*, and the *Advertiser*—whose tors generally restricted themselves to the chronicling of local nts, leaving the graver matters of the state and country to be can- sed by the conductors of the metropolitan press.

'In those days, the chief food of the people was obtained, not in ps, but in market-places. The butter, egg, and poultry market, example, was held at the Cross. Butcher meat could be got where, save in the markets in King-street and Bell-street; nor ld a single green thing be had, except in the vegetable market, in ndleriggs. The meal and cheese market was opposite the College; ile the fish market in King-street (at that time but indifferently plied) was the only place where the tenants of our seas or our ers could be shown off, with exception, perhaps, of fresh herrings, sale of which, during the season, was carried on at the Broomielaw. addition to the live poultry market at the Cross, there were two or ee small *houfs* in Prince's-street for the disposal of dead fowls and ne, the latter being then looked on as contraband, and sold and rchased in the same way as smuggled whisky. Good housewives ays made their own markets, and rarely trusted to servants to ain the necessary articles for the consumption of a family. This se, perhaps, as much from a greater paucity of servants than is w to be found in such establishments, as from a regard to economy. there was as yet no water in the city, except what was to be had m public and private wells, the servants also had more to do than se now-a-days, when everything is brought to their hand without uble. Going to the well was at least a daily duty; and on Satur- nights, when the Sunday's water must be also laid in, on which

occasions there was always a crowd round the large double-headed pump at the West Port, hours were sometimes consumed before the girl's *turn* arrived to draw water. But although during this long time each house was deprived of the attendance of a servant, it is certain that she herself was not idle—at least with her tongue. It was, in fact, around this much-frequented fountain, that the whole gossip of the town was retailed, and where what were vulgarly known as 'clashes' were put into general circulation.

"As travelling before 1790 was but in its infancy in Scotland, it could not be expected that, even with all the patronage offered by the English bagmen, when waiting on their Glasgow customers, there could be much demand for inn accommodation. The fact is, that up to the year 1755, when the Saracen's Head Inn was erected in the Gallowgate, on the ancient site of the 'auld kirk yard' of little St. Mungo, near the Gallowgate Port, there was really no place for the accommodation of respectable strangers or travellers, save in the hostelries of those stablers where 'entertainment' was alone offered and obtained, according to the phraseology of the period, for 'man and horses.' The establishment of this once celebrated hotel was, indeed, an era in the history of Glasgow, associated as it is with the recollection of the doings of the Lords of Justiciary, who so long held their levees, and gave their dinners, redolent of claret—of the whims of the sporting Duke of Hamilton, when waiting on the chances of a 'main' at the cockpit—of Dr. Samuel Johnson, and his biographer, Bozzy, when returning, wearied with their Hebridian wanderings, and thankful to have at length escaped from Highland hospitality and peat smoke; and, though last, not least, two events which, of all others, then marked the onward progress of the city—the marshalling of the procession to lay the foundation stone of the Jamaica-street Bridge, formerly alluded to, but now swept away, and the first arrival of the London mail coach with four horses, which took place on the 7th July, 1788, a vehicle now also sent to the tomb of all the Capulets by the introduction of railways.

"About this period which we are attempting to describe (we mean between 1790 and 1795), there were only four hotels of respectability in the city, and these were the 'Black Bull,' 'Buck's Head,' 'Star,' and 'Tontine;' but perhaps these four, had it not been for the public

dining qualities of the citizens, might have been found even more than sufficient for the business, when it is further considered that the London mail-coach arrived before breakfast on the third day after leaving the English capital; that there was only one conveyance every three days to Stirling; and, what is perhaps more astonishing still, that, even so late as 1792, there were only a couple of diligences and three heavy coaches to Edinburgh; and so slow was their speed, that the passengers who took advantage of them were obliged both to dine and drink tea on the road; while one was so accommodating as to offer, 'if taken in full, to set out at any hour the company chooses.'

"While to the bad roads throughout the country, and to the unostentatious habits of the citizens, may be justly attributed the limited use of stage coaches and private carriages, it must, however, be recollected that the same causes gave encouragement to the keeping of riding horses. The fact is, that at this period of Glasgow history there were more riding horses nightly stabled in the city, in proportion to the population, than there are at this moment; for, without a horse, who could either visit or carry on business beyond the boundaries of the town? Horsemanship was, therefore, practised both by 'gentle and semple;' and although, in most instances, the town equestrians gave but sorry tokens of an acquaintanceship with the precise directions laid down by Gambado, still there were a few who were quite alive to the common rules of the manège, and the joyous excitement and firm seat of the chace. It appears that, so early as 1771, a pack of hounds was kept by certain of the Glasgow worthies, and in a manner, too, that would not have disgraced the master of many of the most crack kennels in England. The pack to which we allude was called 'the Roberton Hunt,' or 'the Glasgow Hounds,' and seems to have originated in a meeting which took place on the 8th April, 1771, at which Messrs. John Orr, John Baird, and Robert Dunsmore were present; and on which occasion certain regulations were agreed on, the chief of which were that Captain Roberton was appointed master for the year, and Mr. Matthew Orr treasurer, and that the hunt should have a uniform, which was fixed to be 'a dark brown frock of hunters' beaver, made without lapelles and to button at the sleeves, with a waistcoat of the same cloth, with lapelles, and lined with white shag—both to have plain silver buttons

It was also agreed to appoint, as was then wont in other parts of the country, a regular earth-stopper, who, in addition to his wages, was to have 'a coat and waistcoat of green cloth, with red cape, and two pairs of plaiding breeches, and a leather cap:' and to this important office Thomas Greer was nominated. A kennel was afterwards erected; and on Thursday, the 17th November, the first meet took place, when a fox was found at Hamilton Moor, and was duly killed 'above ground.'

"If, from the lack of travellers, the Glasgow hotels were limited in number, it is certain that, from the afternoon convivial and club-going propensities of the inhabitants, the taverns, even so far back as 1780, were by no means scarce. The best frequented and most celebrated were situated in the High-street, Saltmarket, and Gibson's-wynd, or Prince's-street. There were, however, also the *Black Bull* in the Gallowgate, *Jane Hunter's* in the Trongate, *Lamont's* at the head of the Stockwell, and the *Bacchus* in the Laigh Kirk-close. The leading oyster house in the town was kept by a Mrs. M'Alpine, Iron Ravel-close, north side of Trongate; and as shell-fish were looked upon, no doubt from their scarcity and costliness, as rather an aristocratic indulgence, the house was necessarily patronised by not a few of the Corinthian order of Glasgow citizens. The more common supper dishes of tripe and cow-heel could only be obtained from a couple of 'gaucy goodwives,' who long retained the monopoly of *monieplies* in the Bridgegate.

"For a few years previous to 1790, and for many years thereafter, the fashionable lounge was on the north side of Trongate, from the Cross a far west as the south end of Queen-street; and there it was that many a young lady gained the envied notoriety of becoming a town and club toast.

"The Green, now so deserted by the wealthy, was then much frequented as a fashionable promenade, both by ladies and gentlemen. At that time the smoke nuisance did not at all exist, for there was not a single steam-engine nearer than the Govan Colliery, then known by the startling title of 'the Fire-work,' and which was situated at a considerable distance beyond the now demolished mansion-house of *Little* Govan. The verdure of the public park, and the foliage of the *elm* and beech, were then in all their pristine beauty, and pedestrians

in summer could at that time enjoy a promenade almost round the whole park beneath the canopy of a wide-spreading double row of trees. The cows there pastured were milked chiefly at the south ends of Saltmarket and Charlotte-street; and thither were attracted, in the mornings and evenings, the nursery maids and children, armed with their tin jugs and bits of bread, to enjoy warm milk from the cow. 'Arn's Well'—which then, as it does still, poured out a stream of the purest water, and which was encircled with a large clump of fine alder trees, alas! now no more—was a favourite trysting place with the lovers of those who went to draw water. At that time, too, the Green had sufficient *hazards* for the golfers; while down the centre of it meandered a small burn or rivulet, fortunately as yet unpolluted with the thousand and one impurities which at present poison every stream connected with the city, and which threaten to render even the once pellucid Clutha a pestilential canal.

"While the Green consequently offered at this time a pleasant and healthful promenade to all classes of the community, it also afforded the only facility which a town without soft water had for washing the clothes of the inhabitants. If it was necessary, even for proper domestic ablutions, to carry water from the Clyde to every house that could afford to employ either their own servants or others for this labour, it was certainly almost the universal practice, in well-regulated families, to have their regular washing-days, on which occasion the servant maid was despatched early of a morning to the public Washing-house, to perform what is now done in a washing-house attached to every modern domicile. This important public establishment was then situated near the spot where Nelson's Monument now stands, and was amply supplied with all the requisites for cleansing purposes; and here daily might be seen congregated—provided any man had the courage to encounter the tongues or the suds of the washerwomen—some hundred strapping nymphs, many of them well worthy of becoming, in form at least, the worthy attendants of any modern Diana, though it may be doubted if they would have all as religiously stuck to their creed as their mythical predecessors! In those times, the washing day was one which was always regarded with dread by every husband who liked the comforts of his own domestic circle, for on *such occasions nothing* was to be obtained at home, and it was

almost the universal practice of such to palm themselves on their friends, with the excuse that 'their wives had a washing.'

"If the better classes were thus obliged to send their clothes to the public Washing-house to be purified, it was to the lower Green, then covered with thick grass, that the housewife or sister of the labouring man carried her burden of soiled linen or cotton to be washed and bleached. Then, along the side of the river, might be seen, in fine weather, the smoke of a hundred black pots, placed in the interstices of a wall that ran along the margin of the Clyde, and from which the hot water was transported by each washer to her own tub. It was indeed a curious as well as pleasing sight to look upon this large city bleaching field, particularly when a dozen of tubs were being used for what was designated 'tramping clothes,' or, in other words, when many couples of well-made happy-looking girls, kilted above the knees, waltzed, if not with the grace, at least with the agility of the best *danseuse* at the Opera."

The analysis of the Census of the city of Glasgow has been published. The population of the "ancient burg" of Glasgow amounts to 403,142, of whom 189,220 are males, and 213,922 are females. The population of the district known as the "ancient burg" and the suburbs is 446,395, of whom 209,999 are males, and 236,396 are females. The amount of the population in 1851 was 360,138, thus showing an increase in 1861 of 86,257. In 1861 the number of inhabited dwellings was 82,609, and of uninhabited 4,002, compared with 63,153 and 1,547 in the year 1851, being an increase in 1861 of inhabited dwellings to the extent of 19,456, and of uninhabited, 2,455. The population is composed of 326,374 Scotch, 10,809 English, 63,574 Irish, 827 foreigners, 1,440 colonists, and 118 not ascertained. The number of males between the ages of 5 and 15 amounts to 40,694, with 40,118 females, and of this number 16,868 males and 16,214 females were not, at the taking of the Census, at school. The number of domestic servants within the city was 218 males, and 12,856 females; total, 13,074.

Places of Interest to visit.—The tourist will find the following table useful:—

Andersonian University and Museum, 204, George-street.—Open from 11 to 3.
Asylum for the Blind, 102, Castle-street, and near the Cathedral.

Asylum for Indigent Old Men, 79, Rottenrow-street, off East George-street.
Botanic Garden, Great Western-road.—Admission 6d.
Cathedral or High Church, top of High-street.—Tuesday and Thursday, 2d.; other days free.
City and County Buildings, Wilson and Hutcheson streets.
City Hall, 90, Candleriggs-street.—For public meetings, &c.
Corporation Halls and Gallery of Art, 206, Sauchiehall-street.
Deaf and Dumb Institution, 36, Parson-street, off Castle-street.
Glasgow University, midway and on eastern side of High-street.
Hunterian Museum, in the College-square.—Admission 1s.
Necropolis, beside Cathedral.—Free admission.—No gratuities.
Post Office, corner of George-square and South Hanover-street.
Royal Exchange, midway and on west side of Queen-street.—Free.
Royal Infirmary, top of High-street, and near the Cathedral.
Royal Lunatic Asylum, Gartnavel, two miles and on 'Bus route west.
Sailors' Home, corner of Broomielaw and James Watt-street.
Theatre Royal, 35, Dunlop-street, off 61—65, Argyle-street.
West-end Park, Woodlands-crescent, end of Sauchiehall-street.
Bridges.—Glasgow or Broomielaw, foot of Jamaica-street, and above the Harbour; Harvey's Suspension Bridge, from the Green to Little Govan; Hutchesontown Bridge, foot of Saltmarket-street to Crown-street; Suspension Bridge, foot of Maxwell-street to Portland-street; Victoria Bridge, foot of Stockwell-street to Main-street, Gorbals.
News Rooms.—Athenæum, 110, Ingram-street; Royal Exchange, Queen-street—free to strangers for four weeks if introduced; Telegraph, 26, Glassford-street—1d. per visit; Tontine Exchange, 14, Trongate—free to strangers for four weeks.
Telegraph Offices.—Electric, Royal Exchange Buildings. British and Magnetic, 24, Royal Exchange-square, and Greenock Railway Station.
Railway Stations.—Barrhead—Hamilton—Caledonian South Side Station—head of Main-street, Gorbals; Caledonian—(Coatbridge, Lanark, Edinburgh, Carlisle, London), head of Buchanan-street; Edinburgh and Glasgow—(Helensburgh, Stirling, Perth, Dundee, Aberdeen), Dundas-street; Glasgow and South-Western—(Greenock, Ayr, Kilmarnock, Dumfries), Bridge-street.
Bankers.—Bank of Scotland, A. Nielson; Laurieston, J. Gourlay and J. Syme; British Linen Company, P. Brodie; City Bank, A. Stronach, Assistant Manager; Ditto, Branch, Anderston, C. Phillips; ditto, Calton, A. Reid and W. S. Harvey; ditto, Cowcaddens, A. M. Reid; ditto, Gorbals, T. Smith; ditto, Laurieston, W. R. Crombie; ditto, St. Vincent-street, J. Dale; ditto, Trongate, W. Robertson; ditto, West End, A. G. Brown; Clydesdale Bank, G. Readman; ditto, Branch, Anderston, W. H. Bremner; ditto, 63, Trongate, P. B. Junior; Commercial, W. Johnston and W. Paul; ditto, Branch, 15, Trongate, G. Scotland; National Bank, J. Hart and J. Miller; ditto, Branch, Argyle-street, W. Reid; ditto, St. Rollox, J. Paris; Royal Bank, A. Robertson; ditto, Branch, Argyle-street, A. Balderston; ditto, Calton, A. Waddell; ditto, Cowcaddens, W. Benham; ditto, Gallowgate, J. Waddell; Union Bank of Scotland, J. Robertson; ditto, Branch, Anderston, J. M'Kendrick; ditto, Cowcaddens, H. D. Strang; ditto, Tradeston, A. Gray; ditto, Trongate, G. Renton.

THE COMMERCIAL ASPECT OF GLASGOW.

The commercial phases of Glasgow, taking them historically, are worthy special notice. About 100 years ago, a few individuals laid the foundations of their fortunes by the tobacco and rum trade in Glasgow. These two branches of business were mothers to other kinds of industry in a small way. After these we have the cotton trade rising into notice. This business, too, branched out into several divisions. While the cotton trade was gradually unfolding itself, the application of machinery, by the aid of steam-power, to manufacturing purposes, produced a new era in the commercial character of Glasgow. After this we have the town transformed into a seaport, by which means her own produce was exported, and her market opened to receive the produce of other countries. The coal trade follows in the wake of steam. The town increases in population, and the shopocracy swell in numbers, and shipbuilding becomes a successful branch of industry. Last of all, we have the iron age, with its wonderful ramifications identifying itself with all the other branches of industry in the country. It will

thus be seen that Glasgow has been surrounded with circumstances of the most fortuitous nature. These embrace what may be termed the first essential elements of modern commerce, being coal, water, and iron. It must be admitted, however, that another element, no less essential, was required to act upon those above named. This last we term mental energy; and we think that this property of the human mind has amply demonstrated its restless activity in the Western Metropolis. The numerous public buildings, the splendidly laid out streets, the gorgeous shops and warehouses, the public halls and offices, the solemn temples, huge manufactories, and princely private dwellings, with schools, colleges, and public hospitals, are monuments that will save us the trouble of proving how that energy has manifested itself in making Glasgow what she is.

The city of Glasgow possesses many characteristics which are peculiar to herself, both in her social and physical aspect. Her leading streets and thoroughfares are unrivalled by those of any town in the United Kingdom, both as regards the general uniformity of the houses, the splendour and elegance of the shops and other places of business, and, above all, as to the regular manner in which her principal streets intersect each other at right angles, by which means the transit from one part of the city to the other is facilitated. Many of her public buildings stand out in bold relief, and embellish the town by their varied beauty and different styles of architecture.

The river Clyde, from being a narrow, winding stream, unfit for the navigation of any craft above the size of a cockboat, has been converted into a noble river, and now bears on its bosom thousands of the mighty leviathans of the deep, whose sails are filled with the winds of every clime under heaven.

During the last fifty years there have been serious transformations in the character and appearance of several of the leading streets, as well as many of the principal places of business in Glasgow. Year after year, some crooked memorial "o' auld lang syne" is being consigned to the tomb of forgetfulness. The old streets which were formerly characterised by the questionable beauty of sharp curved lines, and the angular protuberances of gouty old houses, have been turned from their crooked ways, and are now dressed in the fashionable costume of modern gentility.

We may safely assert, that there is no town in the United Kingdom where commercial progress has produced such rapid and extraordinary changes. Up to 1820, the whole of the retail, and nearly all the wholesale merchants, were located in the region immediately round the Cross, termed from that fact the "Golden Acre." This old trading district embraced small portions of the High-street, Gallowgate, Saltmarket, and the Trongate. From the above date, the town began to extend itself, with astonishing rapidity, to the west. This migration having set in and continued for some years, much apprehension existed among the proprietors in this part of the town, lest it should be left a desolation, and their property totally ruined. During the last seven years, a pleasing change has passed over this old seat of commercial industry. Its old character has been resuscitated, numerous splendid buildings have been erected, and trade flourishes with renewed vigour.

Perhaps there is no place, either in Glasgow or elsewhere, that has undergone such a complete change in its features as the Broomielaw has done during the last twenty years. If a stranger should place himself on the centre of the bridge that overlooks the harbour, and could conjure up to his imagination the scenes we have witnessed on the space over which his eye should range, the pictures of the past would contrast strangely with the present. In looking down the river, the harbour walls extend on each side as far as the eye can see. The extreme point of vision is now bounded by the bend on the river where the fisherman's hut was wont to stand. The whole length of this distance (about one mile) is now lined on the land side with spacious open streets. Between the walls and the streets there are several miles of excellent sheds for the temporary stowage of goods that are about to be shipped, or have been recently landed from the vessels. The whole of the distance above named along the river side is thickly studded with gas lamps, which, when lit up at night, present quite a fairy scene; and when the evenings are serene, the sparkling lights are reflected from the smooth surface of the water like so many twinkling stars in the firmament.

The open part of the river, too, presents an ever-varying scene, from the continual passing and re-passing of numerous splendid steamers, *laden* with their living freights of the inhabitants, who are continually

passing to and from the numerous watering-places on the banks of the lovely and picturesque estuary of the Clyde. Wherever the eye rests there is life, bustle, and commercial activity.

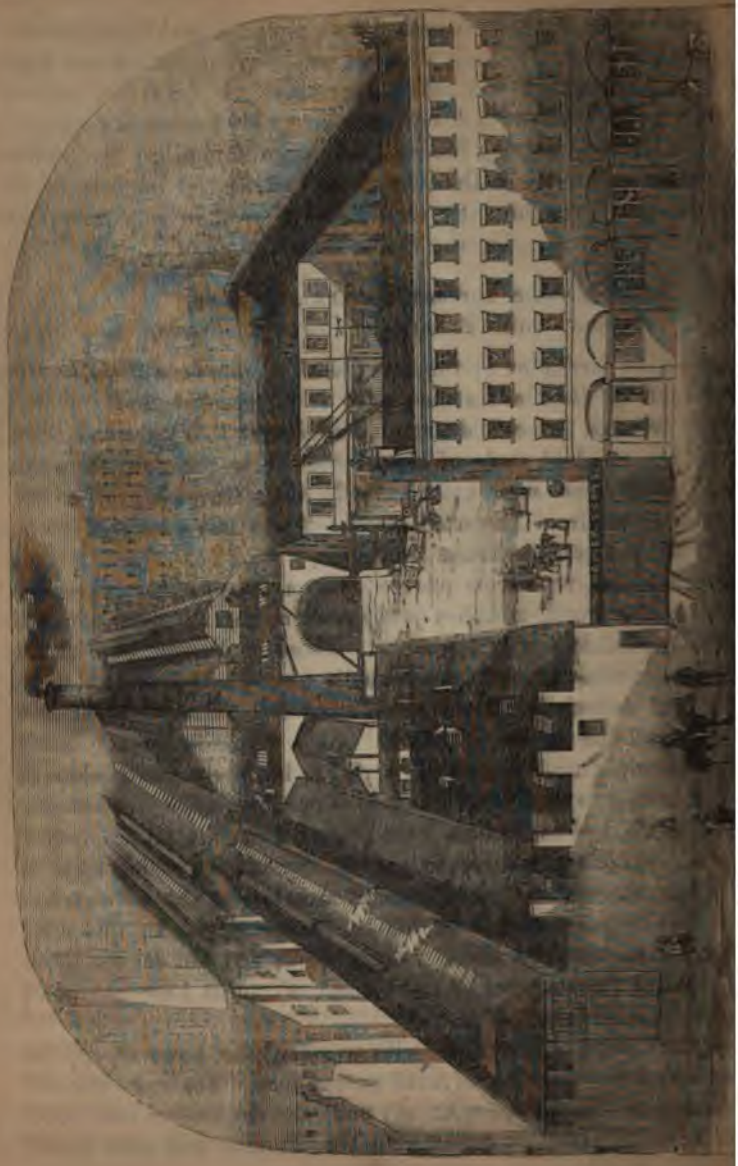
The visitor to Glasgow will naturally direct his earliest attention to the ship-building, graving docks, and large foundries, for which Glasgow, the third city in the empire for commercial importance, is distinguished. Pre-eminently among these, even in this renowned aggregation of factories, are the vast establishments of

MESSRS. ROBERT NAPIER AND SONS,
IRON SHIP BUILDERS AND ENGINEERS.

The business carried on by this firm (*which possesses one of the largest establishments of the kind in the world*) is represented, *firstly*, at the Lancefield Works, Lancefield-street; *secondly*, at the Vulcan Works, within a few hundred yards of the former—these are devoted to the construction of steam-engines; and *thirdly*, at the Govan Works, on the Clyde, two miles from Lancefield-street. These last consist of every appliance for the construction of iron ships.

The name and reputation of the Messrs. Napier have extended throughout the world, and they justly rank among the most eminent of our Ship Builders and Engineers. These gentlemen have at all times held prominent positions in public questions relating to these subjects, and especially of late years, when the manufacture of iron ships engaged the serious attention of all scientific men. Many were the attempts made at an early period to introduce iron in ships of war; but owing to the imperfect state of our knowledge, the material was condemned, and the wooden walls prevailed against all innovation. This was excusable to a great extent, as experiments which were at that time instituted, for the purpose of ascertaining the resistance of iron plates to projectiles, were highly discouraging. In this state the question remained for about twenty years; and but for the active experiments of the Emperor of the French, so might have continued for a much greater length of time.

The construction of the Gloire with armour-plates, however, appears to have settled the question of *wood* versus *iron*. The iron armour-clad man-of-war, Black Prince, already built, and the Hector, now building on the same ground, together with the Warrior, and other plated



ssels building elsewhere, will doubtless form striking examples of the ogress of the iron-cased ship; and although they may be far from rfect, they are nevertheless of a class that must eventually supersede r wooden navy.

We commence our notice of the premises belonging to Messrs. Napier and Sons by a few remarks on the Govan Works, situated on e Clyde, about two miles from Glasgow. On entering the premises have on the right one of the Fitting Shops, where may be seen eam Hammers, together with large Drilling, Cutting, Punching, and ner Machines.

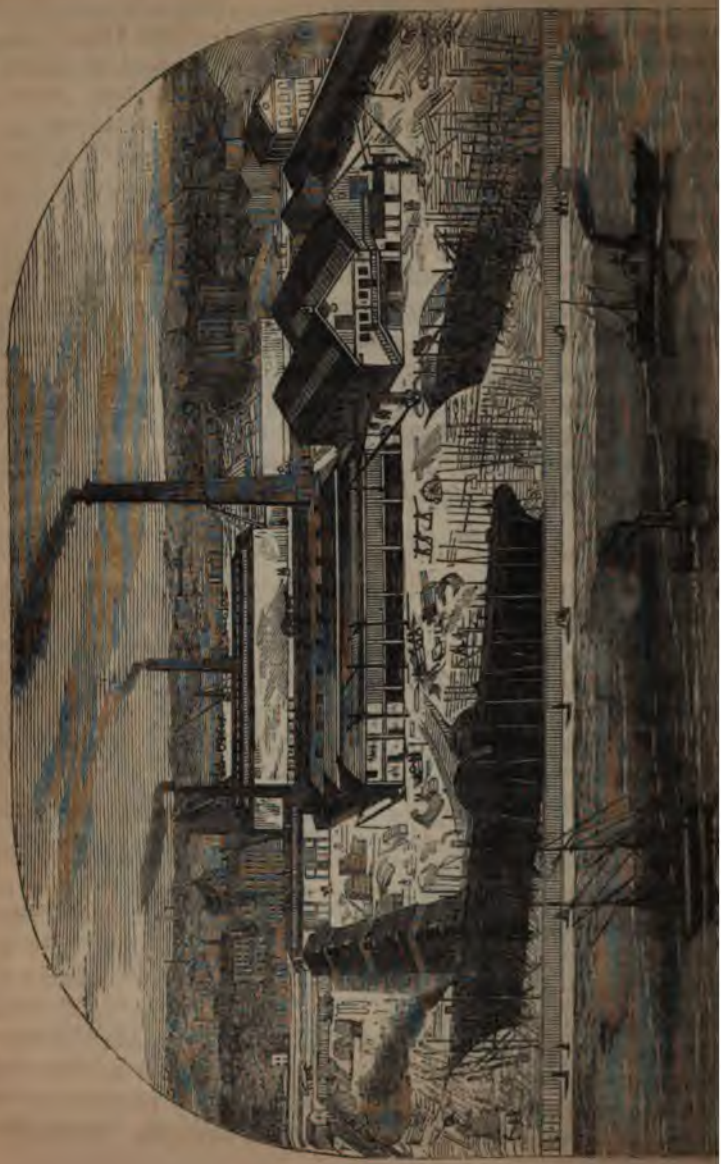
Passing this shop we reach the Ship-building Yard, a sight worth ing, if the reader has nerve sufficient to withstand the noise of the mmers, occasioned by the many hundreds of operatives employed in ferent avocations. On all sides are seen workmen plying the lusty n, in all the operations of ship-building.

Ascending a huge gangway, we stand on board the Scotia (an ocean amer, of about 4,500 tons, in progress at the time of our visit to se works), and gaze with wonder at this and other vessels in ogress.

The launch of this magnificent vessel took place on the 26th of June. e will form a splendid addition to the Cunard line, and will, we ieve, fully maintain the reputation of the Cunard line, as she is the gest vessel after the Great Eastern yet constructed for the rcantile service. Her length is 360 feet, and breadth 47 feet, and ssesses seven watertight compartments, thus making her foundering sea an extremely improbable occurrence.

The next object that arrests our attention in the Govan Works is e large Smithy, furnished with Steam Hammers, Drilling and other achines.

On returning to the large yard, we enter, on the left of the entrance tes, the Saw Mills. To any one who has not seen the operations of is sawing machinery, the sight will be interesting. The balks of mber to be divided into planks are supported by rollers, and secured the ends by suitable fastenings to a long iron carriage. This carriage so connected to the saw frame by wheel and pinion work, that the rriage and balks of timber are propelled forward as fast as the wood cut. In order to keep the balks of timber steady during the

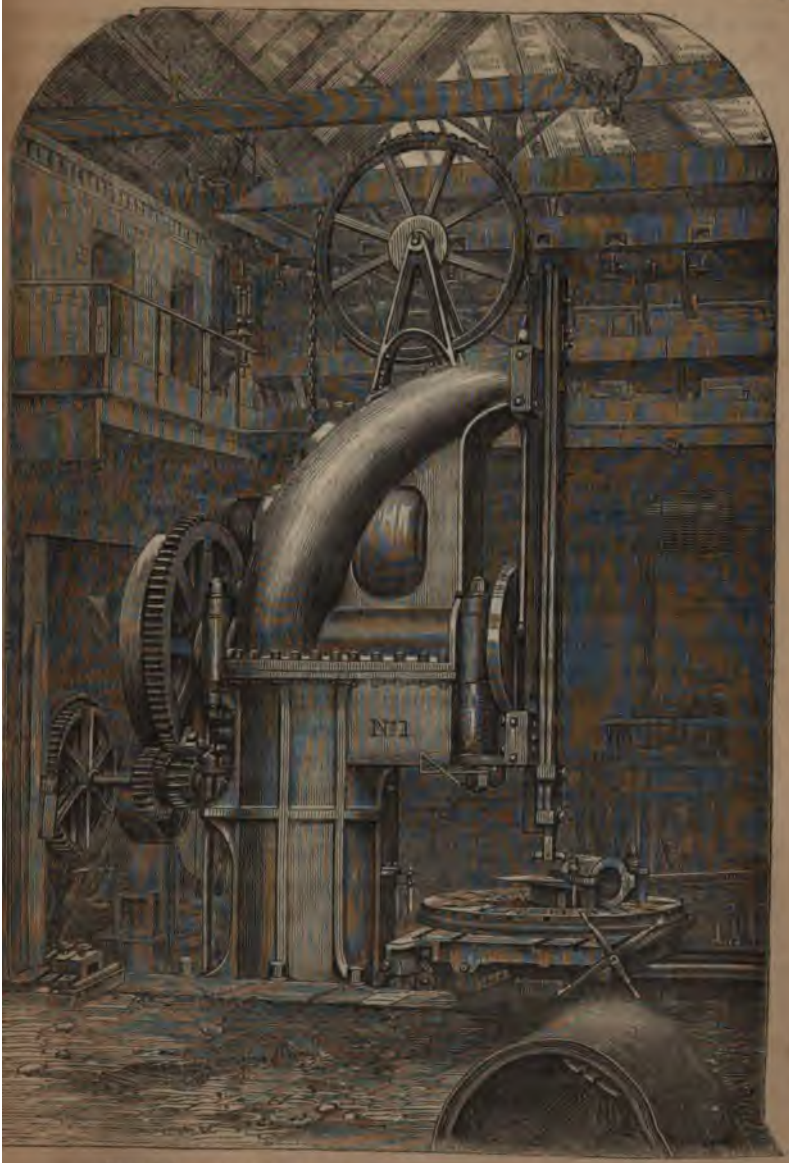


cutting, their inner sides slide against polished steel plates fixed to the framework of the machine, against which they are pressed by rollers. The planing machines at the Govan Works are very complete. Here, also, are vertical and circular saws. The loss of power occasioned by the reciprocating motion of a long saw led to the adoption of circular saws, which, by revolving constantly in one direction, require less power, and may be driven with far greater speed.

Passing through these mills, we reach the large Timber Yards, which contain the Joiners' and Carpenters' Sheds. We next ascend to the Pattern Shops, and the Drawing Offices, the walls of which are covered with models of ships, &c. After the specification of a vessel is drawn up, the ship-draughtsman commences his labours, which are of a parallel nature to those of an architect in building. He prepares drawings of the vessel in various points of view, so as to represent the dimensions not only of the vessel itself, but also every detail of the principal timbers composing it, and also the curvatures of those timbers.

We will now briefly describe the Vulcan Works, in Washington-street. The Offices and Boiler Shops are on the left, on entering, while the Fitting and Turning Shops are on the right. Entering the Boiler Shop, the visitor will see the great care and labour bestowed upon the manufacture of these highly important objects. This is explained by the fearful amount of responsibility connected with defective boilers. Few people are fully aware of the suffering which accidents arising from this cause have entailed upon a certain class of the community, or of the immense destruction of property which has proceeded from the *mis*directed employment of steam.

The production of steam in a vessel placed over a fire is a simple and well-known process, and one which requires no comment. The form of the vessel commonly called the boiler, when steam is to be produced for industrial purposes, is, however, an important consideration, both as regards economy and strength. At first, when high-pressure steam was scarcely known, great strength was not required; but now, when steam is applied at very greatly increased pressures, it becomes a question of the highest importance that the vessels to retain such an immense force should be constructed of the best material, duly proportioned in thickness, and arranged in the form of maximum strength. The boilers



BORING MILL AND SLOTTING MACHINE AT THE LANCEFIELD WORKS.

made by Messrs. Napier and Sons are capable of supporting the severest test: the fact that war steamers, and the largest class of ocean steamers, are supplied with them, is sufficient proof of their excellence. Adjoining the Boiler Shop is a Smithy. In the grounds are large cranes, and on the right is the Engine Fitting Shop. At the time of our visit to these works (April, 1861) we saw, in course of construction, a pair of 500 and 800-horse power engines for Government frigates. A spacious Turning and Finishing Shop adjoining contains large cranes, turning, planing, slotting, and other valuable machines.

The Lancefield Works, in Lancefield-street, will convey the same idea to the visitor as the Govan and Vulcan Works; namely, that of operations on a scale of great magnitude. They are of a very complete description, and are capable of turning out vessels of the largest class, it being sufficient to state that the iron steamship Persia, of about 4,000 tons, was built and fully completed here. In the grounds we saw skeleton frames and funnels for large paddle-wheel steamers. The Blacksmiths' Shop comes in for a share of our wonder, with its numerous fires, and the swarthy workmen pursuing their noisy avocations. Here are steam hammers, instruments of mighty power and usefulness. The Fitting and Finishing Shop contains slotting machines—one of enormous size, weighing about 100 tons. There are also numerous travelling, planing, turning, boring, and other machines. In this department we saw the 900-horse power engines for the Scotia, having a stroke of 12 feet, and cylinders of 100 inches' diameter. We also saw here some of the armour-plates for the Black Prince. In this department are the gigantic Boring Mill and Slotting Machine, represented in our illustration on the previous page.

In the Lancefield Works are large Brass Foundries, and a great number of other objects connected with these immense manufactories, which we cannot, for want of space, enumerate. Altogether, the united Works we have noticed as the property of Messrs. Napier and Sons are of the most complete kind, and we were told occupy about 20 acres of ground, and no visitor to Glasgow should omit to visit them.

The Calico Printing Works of Messrs. Dalglish, Falconer, and Co.

Among the manufacturing *notabilia* of Glasgow, we may certainly place in the foremost rank these Works, which are conspicuously situated in the Campsie Glen, or, more properly speaking, at Lennox Town, close to the railway station, and a few miles only from Glasgow. The Warehouses are at 29, St. Vincent-place, Glasgow, and 10, New Bond-street, Manchester. The partners are Robert Dalglish, Esq., M.P. for Glasgow, and James Hertz, Esq., of Manchester.

Upwards of a thousand workpeople are employed by this eminent firm, and the steam used is equal to 500-horse power. The premises at Lennox Town occupy nearly three acres.

The operations at these Works, under the term of Calico Printing, produce muslins and cambrics, which are exported to all parts of the world.

The average produce of these Works is *twenty-four millions* of yards per annum. Trains from the collieries permeate through the premises, and the consumption of coal is eighty tons each day.

On entering the Works we have on our left the Farm-building before the large mills, and on our right are seen the picturesquely wooded hills of Campsie. Passing the Offices on our left, we reach the base of one of the great chimneys, 180 feet high, and enter the Grey Warehouse. Huge masses of cloth from Manchester are piled up here in profusion.

Before proceeding further we may briefly explain to the uninitiated reader the nature of the processes: first, however, we may mention that the art of calico-printing—that is, producing figured patterns upon cotton by coloured substances—takes its name from Calicut, a district where it has been practised for many hundred years. Before cloth can receive good coloured impressions it must be freed from fibrous down by singeing. In the Singeing House at Messrs. Dalglish and Co., the cloth is passed rapidly over red-hot cylinders of copper. They are next bleached, and on the premises now under notice the reader will observe twelve bleaching *kiers*, as they are called, and several gigantic washing machines.

Here successive washings, boilings, and steepings, bring the cotton to a white state. The washing is to clean the cloth from the dressing,

or mucilage which the weaver had introduced into his warp. As the cloth leaves the washing machine it is subjected to *liming*. Here the kiers of which we have spoken come into use. These are a kind of boiler in which the cloth is exposed for eight or ten hours to the action of a solution of lime. In this kier, the hot liquor is brought up a central tube in such a manner, that being echoed or reflected from a concave surface above, it falls down on the cloth in a profuse shower, thus acting equally on the whole of the cloth. The cloth is next subjected to a second washing, to remove the lime which may be retained by its fibres. Then ensues the process of "grey souring," in which the cloth passes through a machine containing very dilute sulphuric acid, instead of water, and after this there is another washing, to remove all the adherent acid. After this comes what is called "the first ashing," when the cloth is put into a kier, and exposed for a number of hours to the action of a boiling hot solution of soda. The *Bleaching* process next commences, and afterwards a series of washings, ashings, &c. The cloth is next prepared for *Drying*.

Passing through the bleaching department on the premises of Messrs. Dalglish, Falconer, and Co., the visitor will ascend to the White Warehouse, where he will see the mode in which the cloth is dried by being passed over heated copper cylinders. The cloth is then conveyed to an adjacent apartment, and joined for printing. To give the reader an idea of the immense business operations of Messrs. Dalglish, Falconer, and Co., we may mention that *one hundred and thirty miles' length of cloth have been printed here in one day*.

The Printing Shops will excite the liveliest interest in the spectator. In one of these we saw thirteen machines for printing Calicoes and Muslins by the aid of brass cylinders. To each machine is attached a small engine by which the speed can be regulated.

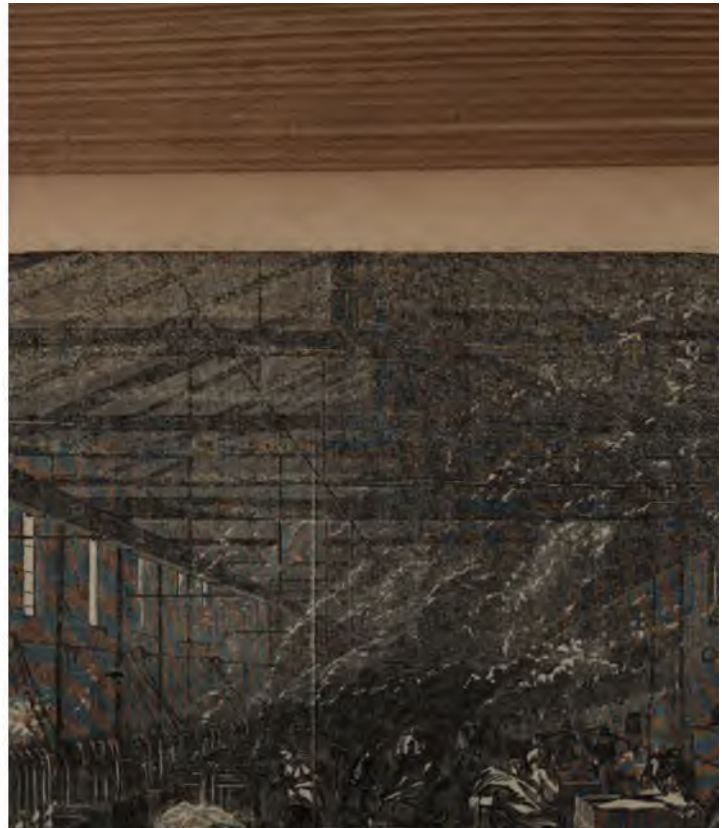
The next process is a very important one, that of Dyeing, in which chemistry renders such essential services. The chemical department is, perhaps, the most characteristic of a print-work. There is, probably, no one in any occupation or station of life more conversant with practical chemistry than a first-rate calico printer. He must study not only the chemical effects of one drug upon another, but the degree in which the vegetable fibres of the cloth will retain those drugs and combine with them; and in endeavouring to imitate the colours of a selected design,

He must choose such colouring agents as will impart to cloth the same tints as the design exhibits on paper. He has to determine also, by oft-repeated experiments, what combinations will make "fast" colours, since the reputation of the firm greatly depends upon this.

The laboratory is fitted up with all the requisite apparatus for making chemical experiments. The calico printer must not lag behind in the march of science; he must know all new important facts relating to the chemistry of colours. Calico printing is an art which has grown with the growth of chemistry, and strengthened with its strength. The knowledge of mordants and of colours, and the other results of chemical discoveries, are of every-day occurrence.

The reader will see to perfection the mode of printing the cloth. He will be shown a large depôt for storing the Engraved Copper Cylinders, the value of which, in one room alone, exceeds £50,000. The Cylinder Printing Machine consists of an engraved copper cylinder, so mounted as to revolve against another cylinder lapped in woollen cloth, and imbued with a coloured paste, from which it derives the means of giving coloured impressions to pieces of cotton passed over it. The cylinder as it rotates dips in a long trough of colour, and every part of it becomes coated. The excess of colour has to be removed from the surface of the cylinder with a knife. This is called *doctoring*. The cloth then passes in a continuous strip between the cylinder and a large roller, or drum, above, by which it is pressed close so as to imbibe the colour from the sunken device on its surface. As the cylinder is continually revolving while the cloth passes, the printing goes on uninterruptedly without stoppage or break. When a machine prints several colours, there are as many cylinders as colours required, each having a trough and doctor of its own, and the cloth passes in contact with each in turn. The economy of cylinder printing is very great; one machine, with a man and a boy to tend the colour trough, being capable of printing as many pieces as 200 men and boys could do with blocks.

In the large Machine and Engraving Shop crowds of busy workmen may be seen, some of whom are engaged in engraving cylinders, while others are removing old patterns. Here may be seen six fine Pentograph machines. This department adjoins another devoted to *etching*. Here are large baths of acid to deepen the patterns made by the Pentograph. In the Die Cutting Department fifty workmen, at least,



are employed; while in the Drawing Shop a large number of artists are constantly engaged in making new designs.

From the Printing Department of the premises now under notice we ascend to the Finishing Houses, where the goods are pressed and packed. Crossing a bridge, we enter the Export Department, where the goods are classed and packed in various coloured papers, and afterwards exported to all the principal calico markets in the world.

Our space warns us to close, but we cannot conclude our observations without recording our admiration of the extraordinary method and perfection of workmanship at these colossal Works.

THE SHIP-BUILDING WORKS OF MESSRS. TOD AND MACGREGOR

are renowned throughout the world for the beauty, the solidity, and magnitude of their ocean steamers.

Leaving the busy portion of the harbour, the reader emerges on Windmillcroft, for many years a favourite bleaching green of the residents on the south side of the river, but now a wet dock; before us, in the distance, may be seen the ship-building yard of the eminent firm above named. These yards are very extensive, and crowded with iron fabrics, destined to take no mean part in the commercial history of the kingdom. Some of these have only had their ribs set up, while others are covered with powerful men, clustering upon them like bees, whose duty it is to sheathe them with their iron coverings.

In connexion with the shipbuilding yard of Messrs. Tod and Macgregor, is the completion of an immense dock, which, at half-tide and under, admits through the gates vessels of ordinary tonnage; while at full tide ships of the largest size and greatest dead weight can be taken in. The gates once shut, by a powerful pumping apparatus the immense body of water is ejected into the Clyde in an inconceivably short space of time; and thus the vessels, previously cradled, can be thoroughly examined in every part.

The benefits which Messrs. Tod and Macgregor have conferred upon the shipping interests of the Clyde by this improvement, which has been completed at an immense expense, are incalculable, as large vessels no longer require to go round to Liverpool and other ports, when it is necessary that their hulls should be examined. This dock was opened in February, 1858.

The Engine Works of Messrs. Tod and Macgregor.

Tod and Macgregor's Engine Works cover an area of above three acres. Most of the buildings are new and admirably arranged to suit the various departments of work; lines of railway are laid, so that heavy pieces of machinery can be taken from one part to another according to the department of work required, whether turning, planing, slotting, or any other stage in the progress of finishing. The Boiler Sheds are of great dimensions, fitted with all appliances suited for performing the work in the best style and on the most economical principle, the various machines being placed to suit the various stages of the work, and a powerful travelling crane fitted up, so that a boiler or part of a boiler can be lifted from one end to the other, or from side to side; a large Smiths' Shop, with fan blast, Condie's steam hammer, and every other requisite.

In the Engine Works are some of the largest turning lathes, slotting and planing machines in the kingdom. There are cranes in the establishment capable of lifting in the aggregate three hundred tons.

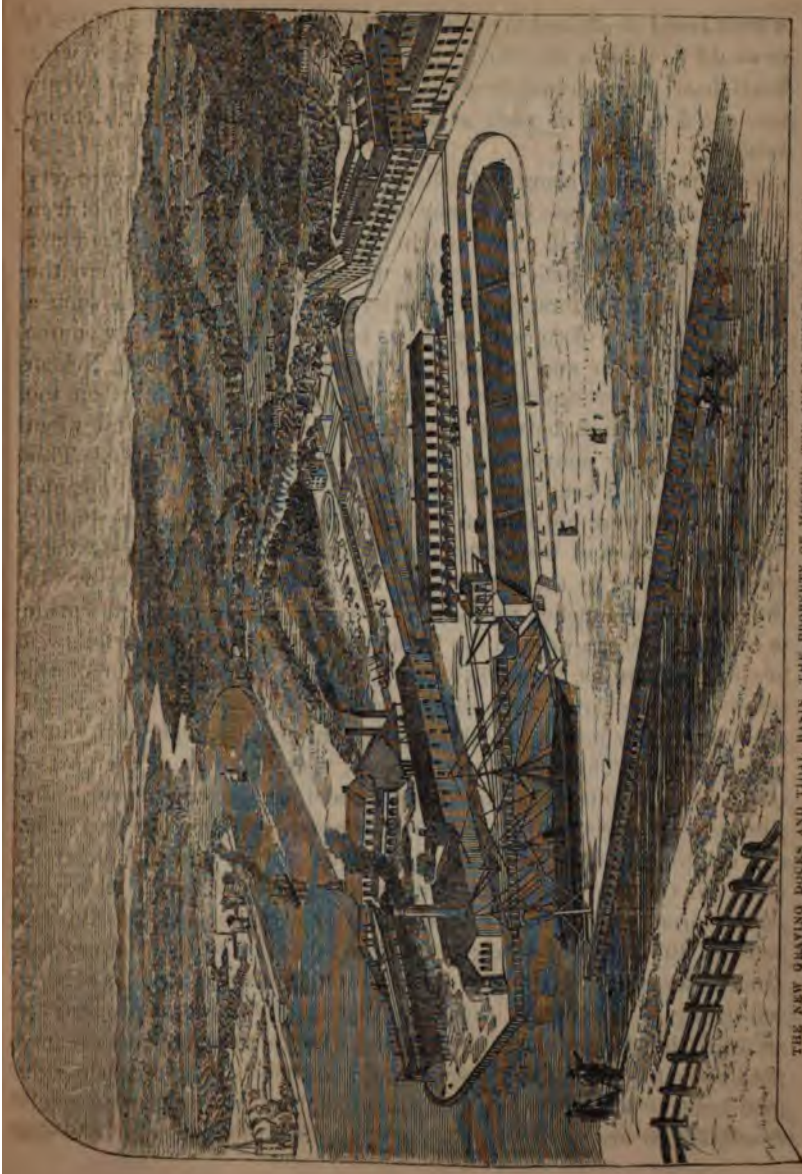
Tod and Macgregor were the first really to make a trade of iron ship-building, and certainly were the first to build a sea-going vessel of that material. The first was the Royal Sovereign, plying between Glasgow and Liverpool; then followed the Royal George and Princess Royal. Since the latter vessel started, in 1841, there has scarcely been a wooden steamer built.

Screw steamers next engaged the attention of these gentlemen, and to show what could be done they built one called the City of Glasgow, and sailed her between Glasgow and New York on their own account a few trips, when a Company was formed in Liverpool, by which she was purchased, ordering at the same time, first the City of Manchester, then the City of Philadelphia, City of Baltimore, and City of Washington, all ranging from 2,000 to 2,400 tons. There was a Company also formed in Glasgow, for which the Glasgow, New York, and Edinburgh were built.

The west of Scotland is remarkably rich in mineral wealth; her beds of excellent coal would almost appear to be inexhaustible. She is also surrounded with an immense strata of both iron and lime. Up to within the last sixty years, these great sources of national wealth

were allowed to lie quietly in their geological beds. The quantity of coals used in Glasgow, even at the beginning of the present century, must have been comparatively small; and as to the iron, nobody thought of working it. According to Dr. Strang's report in the Statistical Society's Journal for 1855, it would appear that the quantity of coals brought into Glasgow in 1831 was only 560,000 tons, and that 120,000 of these were for export, thereby leaving only 440,000 both for manufacturing and domestic purposes. It must be borne in mind, too, that at that date, machinery and the application of steam to mechanical power were in common use in all the manufacturing establishments in the town.

The inhabitants on the banks of the Clyde, in 1812, little dreamed of the revolutionising character of the tiny Comet as she made her voyages up and down the river, with her small funnel leaving its smoky clouds to lose themselves in the pure atmosphere. Up to 1820, there were not a dozen river steamers built on the Clyde. The navigation of the river, so late as 1812, was little better than that of an ordinary canal; and in 1820 the depth of water would only admit vessels drawing eight feet. At the present time vessels of above two thousand tons burthen can come up to the harbour. We well remember when a barque of three hundred tons came up to Glasgow, in 1835. The sight of so large a ship was then such a novelty that everybody went to see her as she lay at her berth on the north side of the river. The harbour was then something like the village of Helensburgh—it had only one side. The following figures, which we have obtained from Dr. Strang's "Statistics of Social Progress in Glasgow," will illustrate the surprising manner in which the trade of the town has expanded during the present century:—In the year 1800 the revenue of the River Trust was £3,319 16s. 1d., and in 1854 it amounted to £86,580 5s. 11d. The same authority gives the number of steamboats built on the Clyde in 1821 to have been six, with a tonnage of 790, and in 1853 the number of steamers built had increased to 86, with a tonnage of 61,044. The Customs' duties, in 1801, amounted to £469 13s. 6½d.; a great portion of this sum would then be paid upon rum and tobacco, as these were the two principal articles of import to Glasgow in those days. In the year 1855 her Majesty's revenue-officers received the sum of £668,556 9s. 4d. in the shape of Customs' dues. If the collector



THE NEW GRAVING DOCKS AND TIDAL BASIN; THE PROPERTY OF MESSRS. TOD AND MACGREGOR, GLASGOW.

of 1821 could be allowed to put on his glasses and see the above figures, he would be sure to take them off two or three times in order to wipe them clean; for no sensible ghost, with the experience of forty years ago, could believe in such a difference, even with ocular demonstration.

From 1835 up to about 1847 the shipwrights on the Clyde were very successful in business; but it may be said that the introduction of iron shipbuilding produced a new era in the whole commercial character of the town. We believe there is no instance on record where the introduction of one branch of industry has been the cause of such a sudden expansion of commerce as has been caused by this new source of national wealth and power. A gentleman of the name of Nelson built a small river steamer of iron in 1830; he had her built on the banks of the canal, between Port-Dundas and Maryhill, and when finished, had her conveyed down to the river upon a machine. This little hard-ribbed boat caused a world of speculation at the time, and the wiseacres were not slow in consigning her to Davy Jones's locker. But the question of the safety, utility, and economy of iron steamers was fairly solved by the enterprising firm of Tod and Macgregor. In 1839 that firm launched the Royal Sovereign. This vessel was made to breast the ocean-wave in the Irish sea. The Royal George followed her in six months. In 1840 this firm solved the problem of the practicability of iron deep-sea-going vessels. The Princess Royal came from their hands, in all the strength, majesty, and beauty of a new creation. There never was a vessel that sailed from the port of Glasgow more indebted to her builders, and, in the end, more profitable to her proprietors. It will be in the remembrance of many, that this magnificent ship met with an inglorious end, having foundered, when old Ocean was at rest, off the coast of Wigtonshire. Although several iron vessels had by this time proved their seaworthiness between the ports of Glasgow and Liverpool, a passage across the Atlantic was looked upon as a thing quite out of the question; nobody was going to be so truly insane as to trust either life or property in an iron ship so far from *terra firma*. The above firm had dreamy notions that the thing was practicable. Engineers and other scientific men built up a series of hypothetical difficulties, which seemed insurmountable to everybody who thought as they thought. In 1850 the

same firm formed a deep-sea-going ship of a number of plates of iron; they baptized her with the name of the Western Metropolis, and sent her to the New World. She went and came, and went again, and most gallantly did she do her work—no vessel ever breasted the billows of the Atlantic with more strength and buoyancy. Since the City of Glasgow set the question of deep-sea-going vessels at rest, the iron-ribbed leviathans of Great Britain unfurl their canvas and sound their whistles on every sea where old Neptune wields his trident.

What number of vessels there may now be building on the Clyde, we are not able to say; but from the everlasting din of hammers which sound upon the ear for miles along the banks of the river, one would imagine that the people were building iron vessels for all the world. There can be no doubt that the extraordinary expansion of manufactures and commerce in Glasgow, during the last ten years, is mainly owing to this branch of industry. People may talk of the gold mines of California and Australia, in all the admiration of real lovers of that precious metal, but we are satisfied that the diggings at home among our black diamonds and black-band are more valuable than even those mines.

The Peninsular and Oriental Steam Navigation Company have had built by Tod and Macgregor between twenty and thirty steamers, ranging from 1,200 to 2,400 tons, all uniformly giving satisfaction, and some of them being the finest in their fleet. We need only mention the Bengal, Simla, Benares, and Salsette, as a proof of this.

The ship-building yard is very spacious, with suitable workshops and machinery for carrying on the business on the largest scale, and to the greatest advantage. In 1854 they erected splendid sheds for building ships under, with travelling-cranes and every requisite, but the great hurricane which visited Glasgow on the night of the 6th and 7th February, 1856, blew them down, involving a loss to the company of £20,000. The wreck was soon cleared away, and they decided on making the graving-dock to which we have alluded. A large piece of ground was purchased for the purpose, and in two years one of the finest docks in the kingdom was opened, capable of holding two of the largest class of steamers at the same time. Workshops and machinery were erected alongside for executing the various branches of work required in repairing or altering ships.

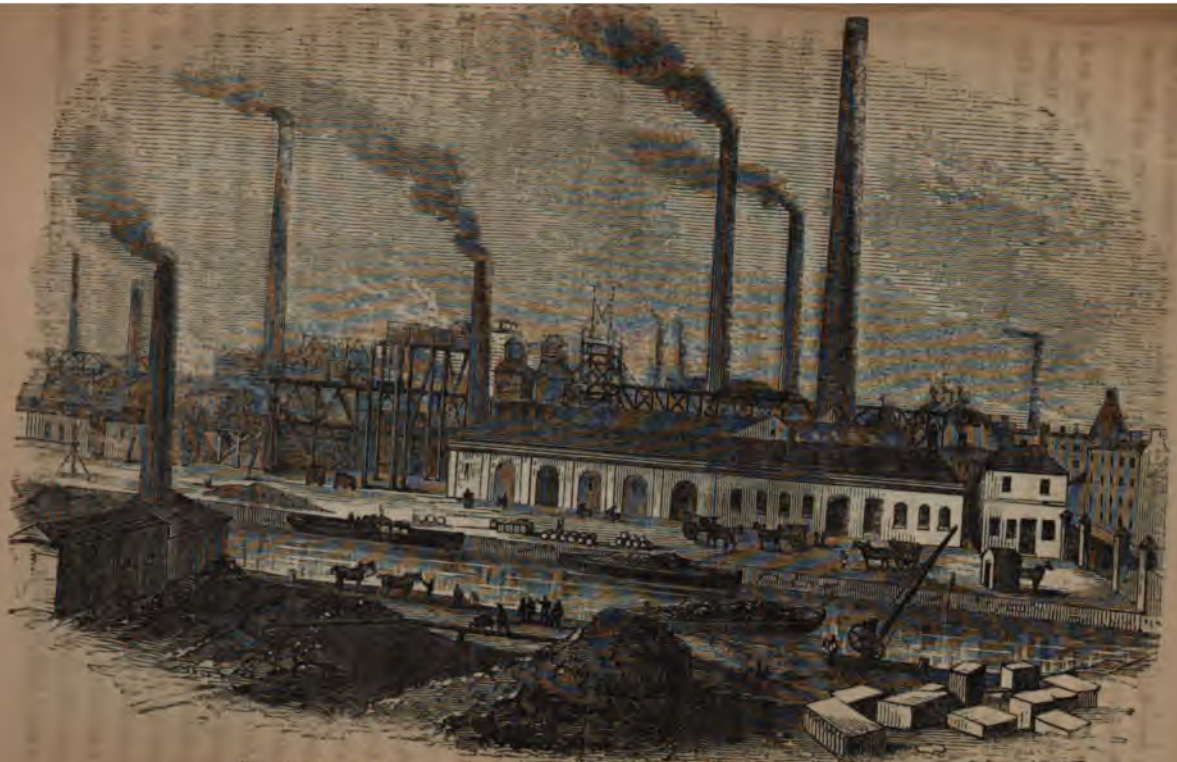
On one wharf there is a powerful steam-travelling crane, capable of lifting sixty tons. In short there is no appurtenance or appliance that skill and experience could suggest but what is supplied.

The "Times" of June 17, 1861, informed us that Messrs. Tod and Macgregor have launched a screw of 200 tons, intended to carry materials required in the construction of the lighthouse commenced at the Monarch Isles, near St. Kilda.

The St. Rollox Chemical Works of Messrs. Charles Tennant and Co.

are in the parish of Inner High Church and Barony. The members of the firm are John Tennant, Charles Tennant, John Tennent, and William Galbraith. There are 1,500 hands employed, and fourteen acres of ground are covered by the various buildings. The steam cooperage is very large, and forms one of the sights of Glasgow. The firm have collieries at Briehead. The offices are in Cochrane-street, and there is conducted a large business as Drysalters, perhaps the largest in Scotland. Mr. Duncan Smith being a partner here, this firm are large importers of oils, madder, cochineal, indigo, and all articles used by calico printers and dyers.

If there were no other manufacturing or commercial establishment in Glasgow than the stupendous works of Charles Tennant and Co., it would be a place of commercial importance. This chemical laboratory stands alone in its greatness, not only in Great Britain, but there is nothing equal to it in the whole world. To the local historian and the political economist, the rise and successful progress of large commercial establishments must afford valuable matter for reflection, more particularly when they are able to trace the ameliorating influence such establishments exercise over the social condition of the people and the general prosperity of the nation. Although there are certain requisites necessary for the proper management of even the most simple forms of business, we know that there are some men who succeed by mere fortuitous circumstances, rather than by any merit of their own. One thing, however, is certain, that the man who enters on business with prudence, industry, talent, and strict application, must have a hundred chances to one in his favour over the person



ST. ROLLOX CHEMICAL WORKS, GLASGOW, THE PROPERTY OF MESSRS. TENNANT AND CO.

who lacks these necessary requirements. The founder of this now gigantic establishment was no ordinary man; he not only possessed the above requisites, but he had also a creative genius of no ordinary character. The late Mr. Charles Tennant was one of those men who lived in advance of the age in which his lot was cast. As a manufacturing chemist, his name stands in bold relief among the commercial pioneers of the present century. His political sympathies were based upon the broad principles of equal law and justice to all, which, in his time, was no very acceptable doctrine in the middle and upper ranks of society. As a man and a citizen, he lived with a spotless reputation.

It is now somewhat more than sixty years since these works were established for the production of bleaching powder, soap, soda, and sulphuric acid. In 1774, *chlorine* was discovered by the celebrated Scheele, shortly after which its wonderful properties as a cleansing and deodorizing agent were found out and introduced to the commercial world. Like all new discoveries, great difficulties were opposed to its general use by the ignorant and interested members of society. It was reserved, however, for the late Charles Tennant, with the aid of his illustrious friend Mr. Watt, to discover and bring into practical operation the combination of chlorine with lime, thereby forming the well-known bleaching powder, which is now such an important feature in the commerce of the country.

As might have been anticipated, this discovery immediately effected a complete revolution in the whole system of bleaching, and, as a consequence, led to a signal reduction in the price of both linen and calico fabrics. At the present time it can only be known to few people, that the process of bleaching was formerly a tedious as well as an expensive one, compared to what it is now. In a general way the old method of bleaching required from six to twelve months. The use of chlorine in bleaching has reduced the months to hours in the time required for the change. The use of bleaching powder has not only effected a revolution in the linen and cotton trades, but it has changed many of the domestic arrangements in the homes of the country people.

Mr. Tennant patented his new method in 1798, when the torch of *civil* war was fiercely burning in Ireland. Since that time St. Rollox has

INTERIOR VIEW OF THE ST. ROLLOX CHEMICAL WORKS, THE PROPERTY OF MESSRS. TENNANT AND CO., GLASGOW.

been pre-eminent for the manufacture of bleaching powder. Sulphuric acid, the vitriol of commerce, is made at these works in really fabulous quantities. The generality of people look upon vitriol as a very unimportant article, and therefore have no idea of its real value as an agent to the well-being of society. There is nothing strange in this, when we consider that the most learned only see things in part; and although many of the secrets of nature have lately been unfolded to the astonished gaze of man, there are still numerous agents whose wonders are yet in store for us. Without vitriol neither bleaching powder, soap, nor soda could be made. Electro-plating could not be carried on, our dye-works and electric telegraphs would instantly be brought to a stand. The fact is, sulphuric acid may be looked upon as the very life's blood of many of the arts, and without it, chemistry, the great humanizer of mankind, could not progress.

The interior of St. Rollox works is the most extraordinary labyrinth that can be imagined. We have no idea of the number of furnaces in operation for making the three principal articles—soda, soda-ash, and chloride of lime, but there must be some hundreds. The soap department is, itself, a large manufactory. In this place sixty tons are produced weekly upon an average. When the soap has undergone the process of making, the material, while in a liquid state, is put into iron-frame moulds five feet deep by fifteen inches. When the soap becomes solidified, it is cut into long blocks by a fine piece of wire; these again are cut into wedges of a certain weight and built up into large stalks. A stranger in going to this warehouse would conceive he was being introduced into the midst of an immense quantity of bricks of various colours.

The most extraordinary part of the works is that in which the sulphuric acid is made. In going into this place we pass between two mountains of sulphur, each of which contains 5,000 tons. We then enter an apartment, with an immense row of glowing furnaces on each side of us, and huge lead tubes above our heads and around us. After we have been half roasted, and our lungs, struggling with the atmosphere, are loaded with sulphuric gas, our good Mentor takes us up a flight of narrow wooden steps until we ascend some hundred feet above the surrounding buildings. It would be impossible adequately to describe the surprising scene that meets the view. Immediately beneath us

there are fifty-eight lead chambers for receiving the sulphurous gas, and converting it into vitriol; each of these immense aërial reservoirs holds 21,000 cubic feet of gas. These chambers are approached by many miles of wooden stages, from which, down to the south and west, Glasgow forms a most glorious picture, with the Cathedral in the foreground, marked with the impress of 700 years. Looking to the west, beyond the town, the Frith of Clyde expands, and again steals away among the mountains of Argyleshire, with the Castle of Dumbarton resting, as it were, on the bosom of the water. Turn which way we will, a magnificent panorama meets the eye. In looking to the south-west, we take in Langside, where Queen Mary lost her kingdom, and the ruin of Crookston Castle, beneath whose walls she rested in feverish anxiety while her sad fate was being sealed. Turning our eyes to the north-east, we are confronted with the mammoth stalk, whose altitude is 450 feet, with a base of 50 feet, and 9 feet 6 inches over the top. This huge monster is continually pouring his sooty treasures into the region of the clouds. If we cast our eyes to the north, we take in the range of the Campsie Hills, and we can discover the valley in the intermediate space, along which the indefatigable Romans built a wall, to keep the hardy mountaineers in their own bleak wilds.

We are once more on the solid earth, and much of it is melting in our presence. Men are moving about like spirits in the fitful glare of the fiery furnaces; some are breaking up the mountains of crystallised soda, others again are bearing immense loads of salt into furnaces. We may mention that this material is the basis of all the leading articles manufactured in the works, with the exception of vitriol.

We are now introduced to the company of a pair of stills, in which the sulphuric acid is reduced in bulk and raised in strength. These stills are made of platina; no other material will stand a fellowship of such intense heat with the corroding liquid that passes through them. Upon leaving the work, we pass between huge air-tight chambers in which the chloride of lime is made. Eighteen tons of lime, finely powdered, is put into one of these compartments, and after it has undergone the necessary process, it comes out twelve tons heavier than when it went in, having absorbed two-thirds its weight in chlorin

while undergoing the change. This portion of the works covers thirteen acres of land.

About a hundred yards to the east, we arrive at another large work that cannot occupy less than three acres. When we enter here, the first thing that attracts our attention, after passing the porter's lodge, is an immense mountain of wood hoops; these are brought from Norway, where they are contracted for. Passing onward, we enter a large brick building, where our ears are greeted with the noise of a large amount of machinery. This is the St. Rollox cooperage. From 800 to 900 casks, large and small, are turned out in this place weekly on an average the year round. Seeing that so large an amount of work is done, we naturally look for an army of coopers. In this, however, we shall be disappointed. Every part of a cask is fashioned and made by machinery. In one place the staves are planed and shaped; in another, the heads and bottoms are cut and bevelled. The staves necessary to form a cask are set up by men for the purpose with a single iron hoop; the embryo cask is then placed in a steam-chamber, and when taken out, is put in another chamber, where the two halves of a mould of the required size are made to enfold the staves by the powerful aid of a Bramah press. When the cask comes out of one of these machines, it is braced tight by four strong iron hoops. All that requires to be done to complete the work, is to put on the wooden hoops and fit in the ends. Some idea may be formed of the immense number of hoops required for this work when it is known that each cask is bound by sixteen; this will give 134,000 weekly, or 6,710,000 annually! The most of the manual labour done in this place is performed by boys.

For some time past the firm of Charles Tennant and Co. have had screw steam-vessels plying between London and Glasgow, and another steamer carries the produce of their works to the various ports of the Baltic, and returns freighted with materials for their own consumption. Numerous coasting vessels are constantly employed in bringing limestone from Ireland, and sulphur from Italy. The firm have also coal-mines of their own, with an iron-foundry to supply the machinery and other necessary fittings of their works. It may appear incredible to many of our readers when we state that 100,000 tons of coals are consumed on the premises annually! The average number of men

employed is over 1,000; the people, however, employed, directly and indirectly, must exceed that by at least eight times. The following materials were consumed in one year:—

Coal	90,162 tons.*
Limestone	30,000 ,,
Salt	17,000 ,,
Sulphur	5,600 ,,
Manganese	4,500 ,,

The whole of the chemical works are laid in all directions with permanent railways for the transit of both raw and manufactured materials.

From the returns made by the Messrs. Charles Tennant to the Industrial Exhibition of Paris in 1854, the following quantities of the subjoined articles were manufactured by them during the previous year:—

Soda-ash	12,000 tons.
Do. in crystals	7,000 ,,
Bleaching powder	7,000 ,,
Sulphuric acid	2,000 ,,

In reference to the sulphuric acid, we may mention that the above quantity was what was made for sale only. We believe the quantity required for their own use amounts to at least 14,000 tons annually.

It may be supposed that the sulphuric department of these works is highly pernicious to the health of those engaged in it. From what we have been able to learn, the average health of the men employed is equal to that of any similar number of unskilled labourers engaged in any other business. These gentlemen have always evinced a human regard for the well-being of the people in their employ. For many years they have retained the services of a medical gentleman, who has long been known in Glasgow for his philanthropic and public spirit. They also support a school upon their own premises for the free education of the children of their workpeople. In 1858 the Messrs. Tennant erected a large building for a new school-house calculated to hold two thousand pupils. This school provides an

* *If we take into account the coal-dross consumed on the premises, we believe the entire quantity exceeds two hundred thousand tons annually.*

improved system of education for the children, both male and female, such as will enable them to go into the world very differently prepared to perform their parts on its stage to that of their parents.

Glasgow may be justly proud of many of the living monuments of her genius and enterprise; but we should say, that if she had only this single establishment to boast of, she would still have much to flatter her pride. When the present race of Tennants shall have passed away, they will leave their names indelibly stamped upon the history, not only of Glasgow, but upon that of the social progress of the nation. Mr. John Tennant may feel justly proud of the order of the Legion of Honour conferred upon him by the Emperor of the French; and we should say, if his own countrymen had the same estimate of high scientific and commercial merit, he would wear a ligature upon his left limb.

When the works of Mr. Tennant were first established at St. Rollox, they were completely isolated. What a change has come over this once dreary locality! The whole district for miles is now teeming with manufacturing life: potteries, glass-works, saw-mills, wood-yards, flax and cotton mills, iron-foundries and machine-shops, coal-depôts, earthenware manufactories, railway-stations, and a busy, hard-working, and commercial population occupy almost every inch of the ground. During the last twenty-five years, the progress of trade and manufacture has been so rapid in this locality, that Port-Dundas and St. Rollox are become an integral part of the city. We can promise strangers a courteous reception at these important works.

Messrs. Charles Todd and Higginbotham, Spinning, Weaving and Calico Printers, Springfield Works.

The large premises occupied by the Springfield Works are situated in McNeil-street, and cover several acres of ground. The Sale Rooms and Warehouses are in Queen-street and Buchanan-street.

The Works at McNeil-street were established in 1825, and are among the most considerable of the kind in the United Kingdom. The number of workpeople employed exceeds 1,500, and the steam that puts in activity the numerous machines is of 1,000-horse power. Several lofty chimneys indicate the locality of the Works, and one of these is 250 feet

SPRINGFIELD WORKS, THE PROPERTY OF MESSRS. CHARLES TODD AND HIGGINBOTHAM.

high. The magnitude of the business operations at these Works will strike an uninitiated observer with surprise; and the immense amount of capital expended on costly and elaborate machinery, payment for labour, &c., is calculated to increase our astonishment, but we must remember the importance of the cotton trade, and the vast amount of manufactured articles required by almost the whole race of mankind. Englishmen have great reason to be proud of the great progress of this industry, when we find that the cotton wool imported in 1800 was but 60,416 cwt., and the value of the British cotton manufactures exported £355,060; whilst in 1859 the imports of cotton were 10,946,331 cwt., and the declared value of the yarn and cotton manufactures, &c., imported, reached an aggregate of £48,208,000 sterling, or much more than a third of the whole British exports. In 1859 we paid more than £30,000,000 for the cotton we imported.*

On entering the Works in McNeil-street, we have on our right hand the six-storied Mill, about 200 feet long and upwards of sixty wide; and on our left seven large boilers, adjoining the 500-horse power engine; altogether there are upwards of twenty large boilers on the premises.

On the lower story of the Mill will be seen several enormous Preparing Machines. Above is the CARDING ROOM, 175 feet long and 80 feet broad, having in it 32 Carding Engines, 8 Drawing Frames,

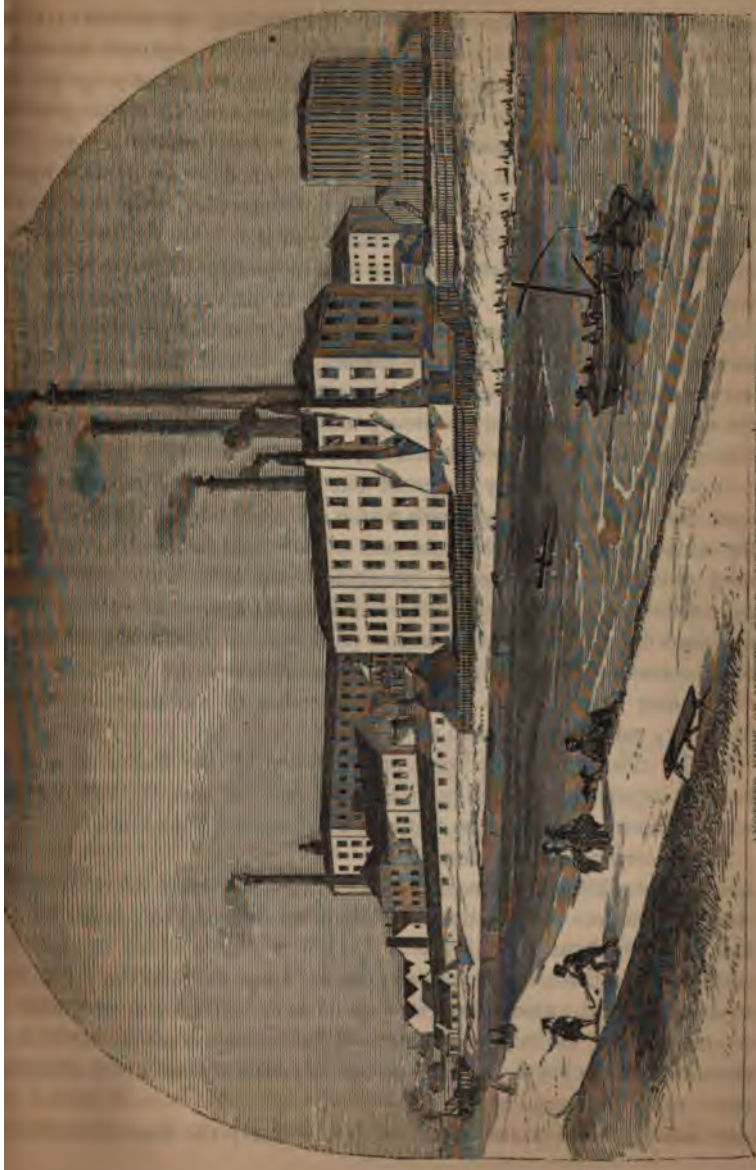
* Lecturing upon cotton as an element of industry eight years ago, Mr. T. Bazley remarked, "Freed from restrictions, the cotton trade has rapidly extended in every department and branch of its vast industry; additional workpeople for new manufactories are continually called for; employment is so abundant, that domestic servants in many districts of Lancashire are difficult to obtain, as the labouring classes generally prefer the short and well-paid-for hours of the manufactory to the more restrictive duties to be performed in family households; and from the activity now displayed by engineers, machinists, spinners, manufacturers, printers, dyers, and many other classes of employers, further extension in this great trade is certain. Not only has the production of cotton manufactures increased from the extension of its machinery, and the more numerous labourers employed therein, but an amazing augmentation in the quantity of every class of goods has resulted from an approximation to perfection in the machines employed, and from the more matured skill of the artisan. Machines have been extended in size, and speeds at which they had first worked have been greatly increased, yet the mechanical perfection attained has been so great that no increase of human labour has been required to attend them; and therefore a much greater production of manufactures has been obtained without any important addition in the cost of a large, as compared with a small quantity; hence has practically been developed that great economical principle—that large quantities in production, with moderately remunerating prices, more than compensate for limited production with high prices."

SECOND VIEW OF MESSRS. TODD AND HIGGINBOTHAM'S PREMISES.

and 2,500 Spindles. The objects of the carding operations are to separate the fibres, which, in their imported state, are entangled in small tufts and knots, and which have been but imperfectly opened in the blowing machine, so as to draw them out into somewhat parallel directions, and to remove completely all the residuary impurities. The card principle consists in the reciprocal action of two surfaces, which are mounted with hook-shaped elastic wire-points. There are two rooms, one containing 12,500 spindles, and another 5,000 *throstle* spindles and 2,000 Winding Machines. The two upper rooms contain 20,000 mule spindles.

The THROSTLE is a machine so simple in its construction, and seemingly so adapted to its purpose, that for many years after its introduction few persons thought of altering or improving it. The throstle is now, however, rendered of invaluable aid to the cotton-spinner. The object of it is to extend the rovings into slender threads, at the same time that it twists them by the rotation of spindles or flyers, and winds upon bobbins somewhat resembling the bobbin-and-fly frame, but with far simpler mechanism, on account of the cohesive strength of the hard twisted throstle-thread. It consists of two roller-beams, each provided with the usual threefold set of drawing rollers, which are mounted upon each side of the frame. These rollers are supplied with rovings from bobbins placed upright upon skewers, fixed in shelves in the middle of the frame, which are called *creels* by the workmen. There are seldom fewer than 72 spindles in a line upon each side of the throstle. There are several modifications of the throstle, but they all consist in the form and operation of the spindle, or twisting and winding on mechanism.

The visitor is ushered from room to room, all furnished with spindles, and enters at length the WEAVING SHED, in which there are 380 weaving looms, besides about 800 looms in another building not far distant. This room or shed is 300 feet in length by 130 feet in breadth. The appearance here is certainly more astonishing than in any other department of the premises. The noise created by so many hundred machines, each consisting of a great number of distinct moving parts, and each producing what would in an ordinary-sized shop be considered a pretty vigorous din, is so stunning and confounding, that a stranger finds it almost utterly impossible to hear



ANOTHER VIEW OF MESSRS. TODD AND HIGGINS-BOTHAM'S PREMISES.

a person speak to him, even close at his elbow, or even to hear himself speak; he walks along the avenues which separate the rows of looms, and arrives one after another at looms all exactly alike; he sees these clattering, hard-working machines on all sides of him; and he may not unreasonably marvel that the persons exposed to this incessant uproar for ten or twelve hours a day can appear indifferent to it. Yet such is the case; habit smoothes away the inconvenience, and the workpeople think lightly of it.

In these power-looms steam-power may be said to do everything. It unwinds the warp from the warp-beam; it lifts and depresses the treadles, by which the warp-threads are placed in the proper positions for receiving the weft-threads; it throws the shuttle from side to side, carrying the weft-thread with it; it moves the batten or lay by which the weft-thread is driven up close; and, finally, it winds the woven cotton on the cloth-beam which is to receive it.

It would occupy many pages of our book were we to relate the processes, step by step, by which cotton arrives at length in the shape of a manufactured article ready for use. We would invite our readers to note well the very interesting branches of the cotton manufacture on these premises, selecting, in all cases, a colossal factory like that we are now describing, in order to see the perfection of machinery which, at an enormous cost, will be found at such establishments.

We may briefly state that the processes of spinning cotton by machinery may be mentioned as follows:—

1. The cleaning and opening up or loosening the flocks of cotton wool, as imported in the bags, so as to separate at once the coarser and heavier impurities, as well as those of a lighter and finer kind.

2. The *carding* already described.

3. The *doubling* and drawing out of the card-ends or ribands, in order to complete the parallelism of the filaments, and to equalize their quality and texture.

4. The *roving* operation, whereby the drawings made in the preceding process are greatly attenuated, with no more twist than is indispensable, to preserve the uniform continuity of the spongy cords; which twist either remains in them, or is taken out immediately after the attenuation.

5. The *fine roving* and stretching come next; the former operation

ng effected by the fine bobbin-and-fly frame, the latter by the tcher mule.

. The *spinning* operation finishes the extension and twist of the n, and is done either in a continuous manner by the water twist and stle, or discontinuously by the mule; in the former the yarn is gressively drawn, twisted, and wound upon the bobbins; in the er it is drawn out and twisted in lengths of about 56 inches, which then wound all at once upon the spindles.

. The seventh operation is the *winding*, *warping*, and *dressing* of yarns, to fit them for manufacture.

. The power-looms.

THE BLEACHING AND DYEING DEPARTMENTS of the Springfield orks are most perfect. In regard to the latter branch, advantage has en taken of all the recent applications of chemistry to the economy d efficiency of dyeing. The large DYE-HOUSE has 22 dye "becks." e Indigo Dye-House contains 50 vats, each 10 feet deep.

Altogether, the business of the Springfield Works is of the most tensive character, and is such as to task the energies of the anagers and superintendents to a great degree. During our visit, we marked with pleasure the general healthy appearance of the operatives gaged on the Works, affording a striking contrast to many whom we d seen in the same occupation elsewhere.

MESSRS. JAMES BLACK AND CO., MUSLIN AND CALICO PRINTERS, EXCHANGE-SQUARE, GLASGOW.

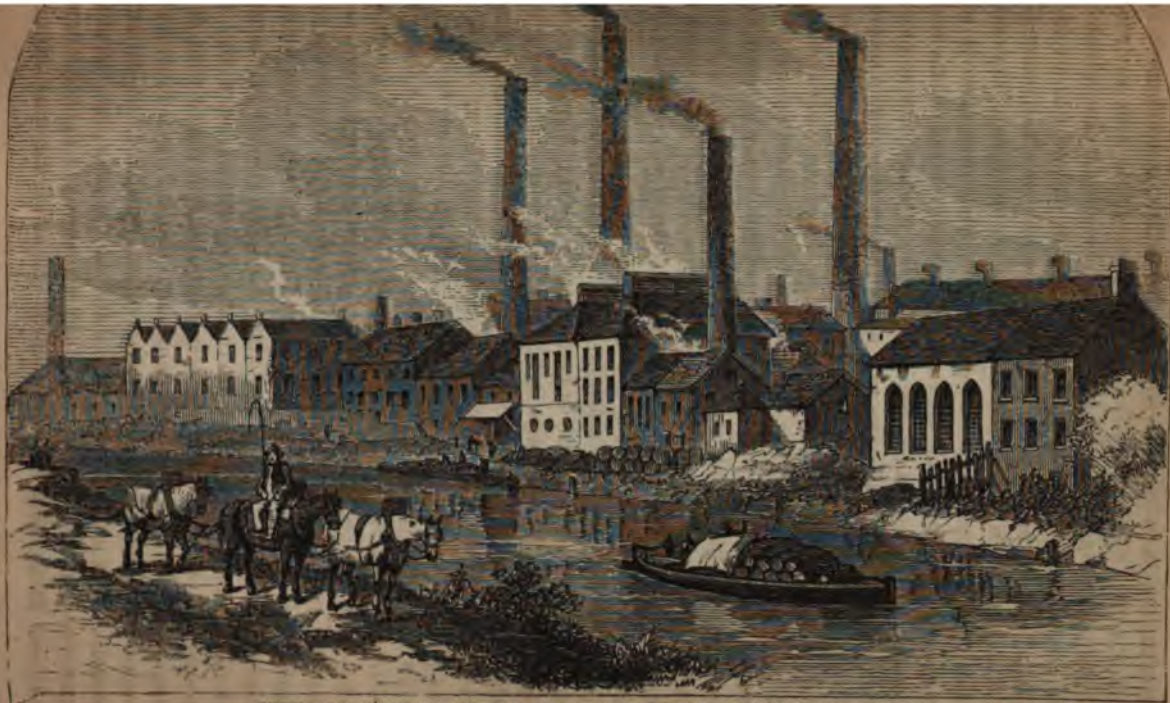
WORKS:—DALMONACH, DUMBARTONSHIRE.

These bleaching, printing, dyeing, and finishing works occupy about ve acres, and employ above 1,000 persons, who are paid in wages bout £30,000 annually. Twenty-five printing machines produce 5,000,000 yards of printed goods per year; these are sold largely in he home trade, and, likewise, to all markets in the world. The senior f this concern is James Scott, Esq., of Kelly.

ENGRAVING DEPARTMENT.—A traced duplicate of the design having een made to such a size as will form a sectional part of the circum- erence of the roller, is then transferred to a soft steel or iron

roller *die*, the exact circumference of the sketch, and engraved
taglio. The die is then hardened by being put into an ir
containing pounded bone-ash, and made red-hot, after whic
taken out and immersed in oil or water till quite cold. It i
taken, being perfectly hard, and fixed in a pair of clams, when
is raised from it by a powerful rotatory pressure. The
a soft steel or iron roller, two or more times the circumference
die, and when placed in the clams along with the hardened die r
a basso-relievo impression of it by means of the rotatory pr
The lightest engraved parts of the die being the first to ap
relievo, an acid is used to etch them down along with the flat
of the superfluous metal not included in the figure, till the
parts are fully brought out; this is effected by besmearing th
with beeswax or tallow, the relievo and other parts not receivi
wax being alone subject to the action of the acid. The mil
undergoes the same hardening process as the die, after whic
fixed in an engraving machine, and pressed on the roller
leaves a perfect indentation of the engraved figure. This mil
multiplication, used for engraving the whole surface of the
roller, which is generally about 40 inches long by 15 inc
circumference. When there are two or more colours in a de
separate *die*, *mill*, and *roller* must be made for each. In this
many as ten of each are frequently done for the more complicated
designs.

The Pentograph Machine is a system of engraving by etching
invented, and is calculated to do many descriptions of desig
successfully. For it a sketch is first made in the same manner
the die, after which it is enlarged to five times its size by the
the *camera obscura*. It is then traced on a piece of flat zin
dark chamber, and afterwards engraved by hand. The enlar
of the sketch is for the purpose of allowing the tracer of the
graphic Machine to travel over the contour of the figure with
The Machine is constructed to reduce the enlarged sketch
traced on the roller the exact size of the original. The e
sketch being so much larger than the original, any sligh
qualities that may occur in it are scarcely perceptible whe
reduced to its original dimensions. It is of the first impo

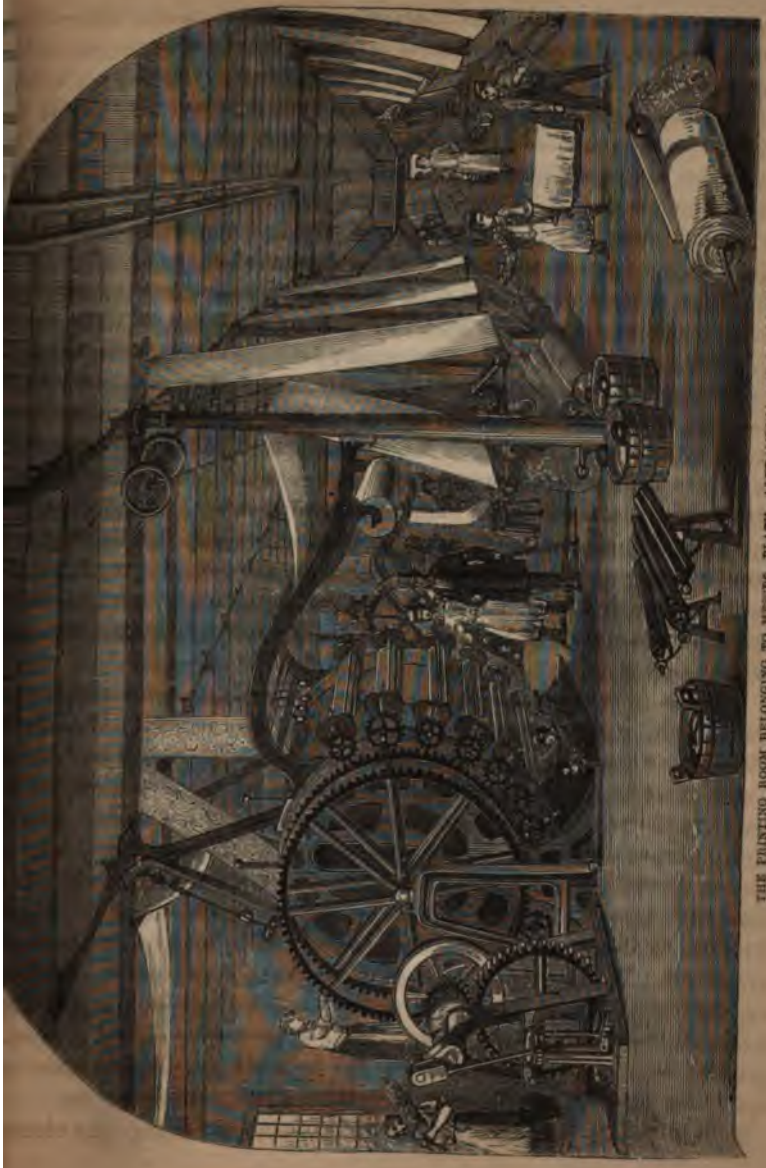


MESSRS. BLACK'S MUSLIN AND CALICO PRINTING WORKS AT ALEXANDRIA, NEAR GLASGOW.

however, that the sketch be enlarged *in perfect proportion*, otherwise, when it comes to be reduced by the machine, incongruous inequalities, contrary to the spirit of the design, will be observable. In the machine, immediately under the roller, which is covered with varnish capable of resisting the action of aqua fortis, a row of diamonds placed on a moveable frame is arranged at distances determined by the breadth of the sketch. As many as twenty-four of such diamond-points placed at distances of one and a half inch apart may be employed at one and the same time. The smaller the sketch, the greater the number of diamonds employed at once, and consequently the more rapidly the roller is done. The zinc is placed under the roller and diamonds, and when the main tracer, destined to work in the contour of the enlarged figure on the zinc, is moved by the hand, all the diamonds, whose number varies in every pattern in proportion to the breadth of the sketch, are put in motion at the same moment, being slightly pressed to the surface of the roller by weights suspended on delicate levers. The design is by this means transferred to the roller, the exact size of the original sketch. When all the repeats have been duly traced, the roller is taken out of the machine and subjected to the action of the acid, which acts only on those parts that are removed by the points of the diamonds. The roller is etched deep or shallow, according to the description of cloth it is intended to print.

In ANOTHER DEPARTMENT we saw the cloths passed very rapidly over a long series of gas jets, to remove from them the superfluous nap. From this department the goods are conveyed into the BLEACHING-ROOM, where the miles and miles of calico are passed through lime-water into five gigantic boiling-pots, and boiled for fourteen hours, and then washed in a solution of muriatic acid, immersed in rosin liquor, and boiled another twelve hours, then passed through chlorine solution, sweetened, and, after being dried, the process is completed. The PRINTING-ROOM is a most interesting department; here the cottons are printed by passing over exceedingly beautiful revolving rollers, capable of printing twelve colours at once. The tedious process known as aging is now entirely omitted by the enterprising proprietors of this establishment; by the agency of a new machine of marvellous power they are enabled to *age* a print in the same day.

In the DYEING DEPARTMENT the first process is dunging: the cloths



THE PRINTING ROOM BELONGING TO MESSRS. BLACK, ALEXANDRIA, NEAR GLASGOW.

being immersed into a tank containing a solution of cow-dun into madder, where the colour is produced by chemical actio pass from the dye-house to the finishing-room. The goo require to be calendered here undergo that process; then t folded and warehoused. We may just mention that in another ment we caught a glimpse of a stretching-machine, where we sa yards on one frame. This room is one of several.

Colour-chemistry has no more beautiful and important appli than in the dyeing and printing of textile manufactures.

When a piece of cloth is dyed, does the colouring matter co chemically with the filament, or does it simply lodge in little Chemists and scientific dyers have long been discussing this qu but without arriving at undoubted results. All that seems to be is, that if any one particular dye be applied to textile mater cotton, flax, hemp, silk, wool, fur, or hair, it will adhere to the different degrees of firmness, and will present different degr brilliancy, according to the nature of the filament. Whether th an attraction or affinity (as chemists term it) between the filam the dye, varying in strength in different instances, or whether th cells or pores of the filament bear a certain relation in size to t particles, seems to be left for the determination of science a future period.

But there is another source of diversity in the relations whi bear to the various filamentous substances above named. Wh is that the cells of the filament and the particles of the dye do each other in size without a little "doctoring," or whether princ a more chemical character are at work, it is seldom that a piece will receive a dye without the intervention of some third ma some friendly agent which will adapt the other two to each All such agents are called by the dyer *mordants*: they have a " action, as the origin of the word shows; they bite the dye filament. Thus there arises a great diversity in mordants; depend not only on the nature of the dye which is to penetr also on that of the filament which is to be penetrated.

But the chemistry of dyeing and calico-printing is far more than the mordants seem to imply. There are no less than six kinds of effect to be produced on woven cotton goods, by c

means, before the dyeing and printing can be fully attained. One is the *cleaning*, the removal of all extraneous matters from the filaments; another is the *colouring*, or the imparting of actual tint to the cloth; a third is the *fixing*, or compulsory union of the dye with the cloth, through the medium of a mordant; a fourth is the *discharging*, or the removal of colour from particular parts of the cloth by chemicals subsequently applied; a fifth is the *protecting*, or shielding the cloth from the action of particular colours at particular spots by a preparation called a "resist;" and, lastly, a sixth is the *brightening*, or the development of the beauty of the colours by an after application of certain chemicals. Now, every one of these six effects has its own particular group of agents; its own range of chemical substances fitted to produce it; its own peculiar connexion with the chemistry of colours; and it is scarcely too much to say, that almost every discovery in chemistry is made available for one or other of the above six kinds of service.

To enumerate the crystals, the liquids, the powders, the gases thus employed, would take us a long journey through the range of acids, alkalies, salts, earths, and other bodies on which the attention of the chemist is bestowed. Sulphur assists in bleaching, and is the source whence the invaluable sulphuric acid is obtained; and this sulphuric acid is one of the means for obtaining the chlorine, the muriatic acid, and the soda, which enter so largely into dyeing and calico-printing.

One most important difficulty of the dyer's art is to range all his colours into two groups—*substantive* and *adjective*—comprising those which adhere to the cloth by their own chemical energy, and those which will not constitute "fast colours" without the aid of a mordant. Not only do dyes differ among themselves in this respect, but one particular dye has different habitudes in relation to different textile materials; cotton will often reject that which wool would receive kindly, and silk yet more kindly; and there have been much more thought and experimental research necessary to obtain brilliant and permanent dyes for cotton, than for silk or wool. In respect to the two designations used above, of substantive and adjective, we may adduce the colours called *lakes* as examples of adjective dyes, which cannot be fixed in the cloth without the aid of a mordant. Whether made from madder, cochineal, Brazil wood, saffron wood, logwood,

quercitron, fustic, or weld; whether called red, crimson, purple, black, or yellow—all lakes seem to have this fugitive character, unless rendered substantive and fixed by the aid of a mordant.

Nothing can better illustrate the extraordinary complexity which sometimes marks the operations of the dyer, than the mode of producing the celebrated *Turkey red* dye—that which has been brought so much into favour by the bandana handkerchiefs. Here the brilliant tint is obtained by a long series of processes, each of which is intended to effect one particular change in the relation between the materials and the cloth. The cloth is steeped in an oily liquid; it is allowed to ferment or "sweat" for several hours; it is exposed to the heat of a hot closet for several more hours: these three processes are repeated a second time, and then a third time; the cloth is steeped in an alkaline liquid; it is steeped in a solution of alum and galls; it is steeped in lime-water; it is boiled in a solution of madder; it is washed, cleaned, and dried; it is again steeped in alum and galls, and again boiled with madder; it is boiled for many hours with soap and pearlash; it is boiled a second and a third time, with some additional ingredients; it is exposed to the fresh air for some time; it is boiled in water containing bran; and finally it is dried. Now every one of these manifold processes is the result of laborious investigations, which have cost much time, anxiety, and capital, although the resulting product may perchance be sold very cheaply. The dyer knows that if he once obtains a reputation for a beautiful dye, it may avail him for a sale of millions of yards; and he therefore scruples not to devote his best attention to that which may make its appearance even in a pocket handkerchief sold for a few pence. The above-named processes for Turkey red are those adopted in France: the Lancashire and Glasgow dyers adopt various modifications in one or other of the manipulations. It is said that this rich tint owes more to the dyers than to the chemists; the dyers have discovered it by a series of attempts, while the chemists are yet at fault concerning the *rationale* of the several effects produced.

No one visiting Glasgow should fail to inspect the magnificent works under notice.

Messrs. James and William J. Scott and Co., Spinning and Weaving Factory, Bridgeton, Glasgow.

Within half an hour's walk of the Exchange, and pleasantly situated in the Public Park, stands the spinning and weaving factory of Messrs. James and William J. Scott and Co. Amidst the gigantic factories which indicate so well the enterprise of the manufacturing metropolis of Scotland, in its own particular branch of trade, that of the Messrs. Scott may be considered almost unrivalled. The magnitude of the concern may be imagined, when it is stated that the works cover an area of five acres, and employ over 2,000 people, who receive in wages annually the sum of £50,000. In the spinning department there are 125,000 spindles (hand mules, self-actors, and throstles), the annual consumption of cotton-wool being 1,200,000 lbs. In the weaving-sheds are 2,000 looms, producing annually 15,000,000 yards of muslin-cloth (the printed muslins of trade). The machinery is driven by engines of 1,200 aggregate horse-power.

Every one now knows that cotton is a soft, white, woolly, fibrous substance, which is brought to England in masses; and that the fibres are disentangled, straightened, and made to join smoothly and regularly into a yarn or thread; which thread is then woven into one or other of many different kinds of cotton cloth. Every one knows, too, that the operations on these delicate downy fibres constitute one of the largest departments of British industry; but there are few readers who know *how* large.

Most marvellous, indeed, is the magnitude of these operations. The quantities and weights which denote the present state of our cotton manufactures are so startling, that nothing but a concurrence of evidence from all quarters could render them credible. That we work up into yarn nearly two million pounds of cotton *every day;* that we have twenty million spindles, whirling their rapid course in spinning this cotton into yarn; that a quarter of a million power-looms, besides hand-looms, are employed in weaving so much of this yarn as is not exported before weaving; that we have two thousand factories in which this mass of cotton is spun and woven; that between three and four hundred thousand persons are daily employed within the walls of

these mills, besides those elsewhere employed in various departments of the manufacture; that the machinery of these mills requires eighty thousand horse-power of steam and hydraulic agency; that, after supplying the home demand in 1850, we exported woven cotton goods to such an extent as would give an average of nearly four million yards (far beyond two thousand miles) *every day;* that, besides this, and besides cotton lace and hosiery, we exported nearly half a million pounds of unwoven cotton yarn per day;—that all this is true, we have evidence of various kinds, but especially an elaborate Report prepared for the House of Commons in 1859.

In whatever country cotton is grown, the mode of culture is nearly alike. The cotton tree is an herbaceous plant, usually from four to six feet in height, varying according to circumstances of soil and climate. Very little attention is paid to any part but the seed-vessel, which is a capsule containing three, four, or five lobes; in these lobes are many seeds enveloped in cotton fibres. When the so-called "Ethiopian" songsters tell us of their heroes and heroines "pickin' cotton in the fiel'," they are thus far right; the cotton *is* picked in the field, and the tree left standing; the tufts of cotton are taken from the capsules, thrown into baskets, and conveyed within doors, to be somewhat cleansed from impurities before being shipped to the manufacturers. There are usually two crops in a year, one eight months and one twelve months after the time of sowing; the two gatherings from each plant yield about a pound of cotton fibre on an average; and an acre of plants about 270 lbs.

One of the few machines employed upon cotton before the actual manufacture is the *gin*—an apparatus never seen in action in this country, because we do not receive the cotton in a state which requires its services.

When the cotton has been collected from the field, it is found to be mixed up with seeds, the removal of which is essential to the subsequent operations. The earlier machines were very inefficient to this end; but the patent gins now employed do their work well and rapidly. So numerous, bulky, and weighty are the seeds gathered with the fibres from the pod, that they form three-fourths of the entire weight—the weight, as imported into England, being only a quarter of the gross weight. The gins vary considerably in the mode of

action; but all contain teeth, spikes, combs, or saw-edges, affixed to a rotating cylinder, and made to shake, and open, and tear the little knobs of cotton so thoroughly as to cause the seeds to separate and fall out.

The laden ships cross the Atlantic, and Liverpool becomes the recipient of these myriads of cotton tufts. If a plant yields 1 lb. of *impure* fibre per year, and if 4 lbs. of this become 1 lb. after being "ginned," and if England's appetite for this commodity extends to 700,000,000 lbs. of ginned cotton in a year—this looks very much as if 2,800,000,000 cotton pods have to be picked by negro fingers (or other fingers) for our annual supply. Although London and Glasgow, and a few other ports, receive portions of these immense cargoes, Liverpool receives the overwhelming majority; and from that busy emporium the bales of cotton are transmitted to the great manufacturing towns.

If, in the midst of the din and excitement of the "machinery in motion," we could steadily follow the travels of a bale of cotton, we should trace the action of some of the best modern machinery.

First, then, here are the bales of cotton, brought from various parts of the tropical world, and weighing 300 to 400 lbs. per bale. The women and girls take out this cotton by handfuls, and feed with it the insatiable *opening machine*. The cotton, laid upon an endless apron, is caught between the teeth of revolving rollers, which effectually tear and separate the locks asunder; the cotton is opened into a light and flocculent mass, and the few remaining seeds and the dirt are expelled. Then the *scutching machine* comes into requisition; again is the cotton placed upon an endless apron, and again exposed to the action of revolving rollers; the impurities are yet further separated, and the beautiful downy cotton becomes lapped in a continuous sheet upon a cylinder. These broad soft sheets go to the *carding machine*, where a number of wire combs, or rather wire brushes, comb the cotton out into straight fibres; and these fibres are dexterously whipped off by a "doffing" apparatus, to assume the form of delicate narrow ribbons or *slivers*. Next we see all these slivers joined by another machine, so as to form a continuous *lap;* and this lap is again carded and doffed, by which the substance becomes equalised as much as possible. The cotton is thus again brought to the state of a ribbon or sliver; and then

are brought into use the machines which convert this ribbon into a yarn or thread. The *drawing*, the *slubbing*, and the *roving* machines all have relation to this conversion; we see numerous pairs of rollers, between which the cotton is drawn; the drawing rounds it, equalises it, and gives it a slight twist; until at length we see the delicate yarn—fine, perchance, as a spider's web—elaborated from the thick but soft ropes of cotton.

More correctly, however, we should say that the cotton does not become yarn till after the spinning. Nothing excites more astonishment in cotton factories than the *self-acting mule*. The complex carriage, twenty or thirty feet long, with its army of spindles, travels slowly to and fro, and draws out the delicate threads to a state of still greater delicacy and tenuity; the drawing out thins the cotton, the rapid revolution twists it; and thus, by drawing and spinning, do the manufacturers of the nineteenth century produce cotton-yarn whose fineness almost exceeds belief. And while the *mule machine* is thus making fine yarn for weft threads, the *throstle machine*, by a different mode of action, produces the stronger yarn for warp threads. Then, again, if it be sewing cotton or hosiery cotton that is required, we trace the yarn to the *doubling machine*, where two yarns or more are twisted one around another, whereby a much denser thread is produced.

Another artisan now claims our notice—the weaver; and another group of machines subsidiary to his labours. There is the *winding machine*, by which the yarn is wound on large bobbins. There is the *beaming machine*, by which the yarn is transferred to large beams or rollers. There is the *dressing machine*, by which the yarn is drawn out into parallel lines of warp threads, and stiffened with an application of flour-paste. And, lastly, there are the *looms*. Steam unwinds the warp from the beam; steam raises the alternate threads to form the "shed" or opening for the shuttle; steam drives the shuttle from side to side; steam drives up or consolidates each thread of weft as it is thrown; steam winds the calico or cloth on a large roller; and steam rings a bell to tell the attendant how the loom is getting on with its work. The attendant really does none of the weaving; she (for it is mostly a female) watches a couple of looms alternately, to see that the beam has enough warp and the shuttle enough weft, to mend any

threads which accidentally break, and to make a number of little minor adjustments; but the giant power of steam—that power which will forge an anchor or make the eye of a needle—moves everything, does everything. In short, so far as regards the bulk of cotton goods produced at the present day, steam-power is the opener, the scutcher, the carder, the lapper, the drawer, the rover, the spinner, the doubler, the winder, the warper, the dresser, the weaver—he is the master-workman, and the machines are his fingers.

The Lancefield Forge Company.

The Lancefield Forge is situated in Lancefield-street, and, established in 1827, was for some years the only Forge in Scotland. The operations of this Company are confined to the making and finishing of Malleable Iron Forgings for all purposes; and through the various engineers by whom they have been employed, they have furnished a very great proportion of the Forgings for the Steam-ships of the Cunard, the Royal Mail, the Peninsular and Oriental, and other kindred companies: while, as evidencing the extent of their capacity for such work, we may instance all the heavy Forgings for the "Great Eastern," such as the enormous Crank-shaft (weighing thirty-one tons); the Paddle-shafts, each weighing thirty tons; the Cranks and Friction Straps, weighing ten tons each; the Rudder, weighing twenty-five tons; the Propeller Shaft, forty-seven feet long, and thirty-five tons in weight,—all manufactured at the Lancefield Forge for this monster vessel. We may mention that these forgings were effected at this Forge as a *dernier ressort*, no other company having been found to undertake the responsibility; and it is but justice to the proprietors of the Lancefield Forge to state, that they performed their part of the contract with remarkable success.

Entering the Lancefield Forge, we perceive the Offices on our left, together with the large Furnace and apparatus for bending sterns for iron ships; and on the other side, the large Yard, with its powerful crane and steam-hammer sheds, among which the position of the great Steam-Hammer is indicated by the noise of the ponderous hammer in motion, a mass weighing six and a half tons. This colossal instrument is characterised by its great width between the columns, which are twenty feet apart, thereby giving every facility to the workmen in shaping the various masses treated under its powerful blows. Upon

THE LANCEFIELD FORGE.

this immense and powerful instrument the greater part of the forging operations depend. Dr. Fairbairn (from whose useful work we have already quoted) says that "the forging of iron has entered, of late years, so largely into the constructive arts that the manufactures, however perfect in the rolling-mill, would be very imperfect indeed without the forge. We cannot but wonder at the many devices, and the numerous contrivances which present themselves for the attainment of the operations of the forge. In effecting these objects, Mr. Nasmyth's steam-hammer is evidently the most effective, and to that instrument we are indebted for the welding of large masses of iron upon a scale previously unknown to the workers in that metal."

The old form of forge-hammer, or at least the form most suitable for heavy forgings, was that known as the belly-helve. In this hammer the wheel carrying the cam by which it is lifted is placed between the anvil and the fulcrum. The action is simple and the hammer is effective, but there is no provision for altering the intensity of the blow, whatever the nature of the work which had to be accomplished. For heavy forgings, scrap iron, cut up into small pieces by the shears, is usually employed. It is placed in a revolving hexagonal drum, by which the pieces knock each other about, and are cleaned from rust; and being piled or fagoted into convenient-sized masses of one or two hundredweight, are placed in a reheating or piling furnace, similar to the reverberatory furnace employed in puddling. When they have reached a welding heat, they are placed under the helve, and united into a bloom or slab. These slabs form the masses of which larger forgings are built up. These, when too large to be handled by the forgeman, are supported by a crane beside the hammer, so that they can be turned over and manipulated with the greatest ease.

Mr. Nasmyth took out his patent for the invention of a hammer, which has superseded all preceding forge tools in the better descriptions of work, in 1833; and from that time up to the present, it has maintained its ground against every innovation, and has performed an important duty in almost every well-regulated work in Europe.

From the hammer shed of the Lancefield Works, we enter, on our right, the large WELDING STERN FRAME DEPARTMENT, which is 160 feet long by 50 feet broad.

We may here mention that the Lancefield Forge Company were the

first to make SOLID STERN FRAMES. In this department, also, the visitor will see some radial drills, also powerful shears for cutting iron, moved by steam of 20-horse power.

During our recent visit to these Works, we saw in this department, among various Cranks, Piston Rods, &c., some Trunnions made for the Armstrong guns, now being manufactured for Government; and we may here remark that this establishment has supplied a very great proportion of the armour-plates for the iron-plated war vessels made for Government of late years, such as those for the "Etna," the "Erebus," and the "Black Prince," at present in process of being completed by R. Napier and Sons, of Glasgow. It is necessary to state that some of these plates were tested at Plumstead Marshes, and bore successfully the most severe trials to which they could have been exposed.

We will now enter the MACHINE SHOP, furnished by costly slotting, boring, turning, and planing machines. The column of one of these gigantic slotting machines is of one solid casting, weighing alone twenty-eight tons. By the aid of this enormous machine the cranks of the "Great Eastern" were shaped and finished. In close proximity the visitor will see a five-ton steam-hammer by Nasmyth, and a large Condie steam-hammer. It is worthy of notice that almost the very first of Nasmyth's hammers was made for this establishment, and that it was here, also, that the Condie hammer was first brought into use for forging; since when, apart from those furnished by Nasmyth, they have now five of the latter at work.

Adjoining the great Steam Hammer (the anvil block of which is fifty-two tons weight, and of which the Sheds, Furnaces, and other erections are in like gigantic proportion), are the large Cranes, capable of lifting seventy tons; and here may frequently be seen propeller, paddle, and other shafts, from ten to twenty tons weight, in process of manufacture.

This colossal Forge may, in fact, be considered one of the *lions* of Glasgow, and should, on every account, be visited by the tourist. Much information of a practical and useful nature will be gained here, the operations being on a scale far above those of the ordinary forges, and the most powerful machinery of modern construction being employed in all the departments of the Works.

Foundry Work.

On entering the Works from Finnieston-street, we
left the newly-erected and lofty Offices and the large
contiguous to which is the large Boiler Shed, 250
75 feet in breadth, and 40 feet in height. At the peri
to these works we saw in this latter department several i
made for exportation to South America, China, and othe
world, the home orders for these important objects b
vessels in the coasting trade.

Annexed to this department is the Fitting, Turning,
Shop, one of the largest of the kind in the kingdom,
long, 70 feet in breadth, and 50 feet high. Here ma
enormous cranes, each of 30 tons power, besides slo
drilling, cylinder-boring, and other machines, including
powerful lathes. Adjoining is the Smithy, 96 feet in le
breadth, and 40 feet in height; having 22 fires, with (at
visit) preparations for numerous additions. From t
ascend to the Finishing Shop, 112 feet in length and
From hence we ascend to the Pattern or Modelmaker
same dimensions as the preceding room. In this d
Circular and other saws, with other first-class machin
the Drawing Room, the length of which is 230 feet, brea

On the right of the entrance to the Lancefield Fo

THE CLYDE BANK FOUNDRY, THE PROPERTY OF MESSRS. JAMES AND GEORGE THOMSON.

the most improved description, and of extent and power fully adequate for the largest size of work. The Engine Works closely adjoin the harbour and the quay, where the largest cranes for shipment of machinery are placed. The Messrs. Thomson employ, when fully engaged, upwards of *two thousand workmen*, and can turn out annually engines to the extent of 3,000 to 4,000-horse power; and vessels to at least double that amount of tonnage.

Commencing shipbuilding in 1852, Messrs. James and George Thomson built about 60 vessels, nearly all steamers, among which are some of the most successful and best known ships afloat: we may mention the "Iona" and "Giraffe," Clyde steamers, reputed the swiftest in that river; the "Jura" and "Australasian," "Olympus" and "Atlas," belonging to the Cunard Company; and a whole fleet of steamers in the Mediterranean service, &c. Messrs. J. and G. Thomson are building a swift and large paddle steamer for China, steamers for West Highland trade, a large screw steamer for Spanish Steam Navigation Company of Cadiz, &c.

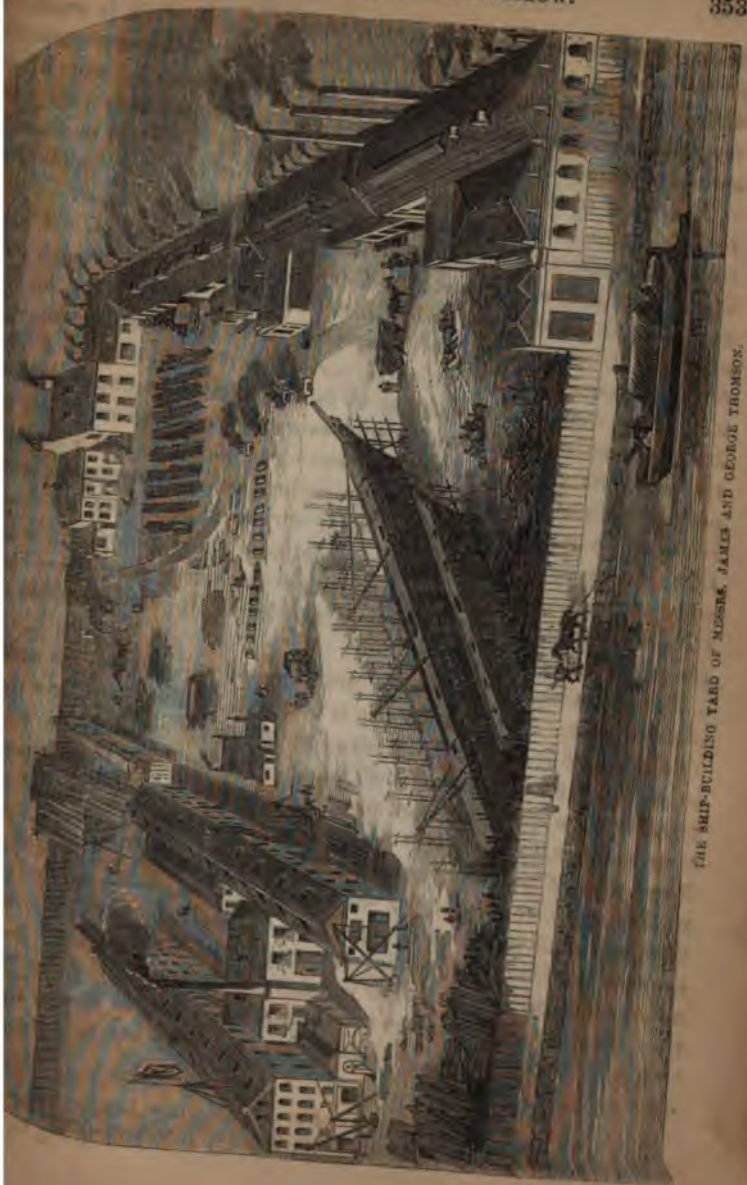
The Clyde Bank Iron Ship Yard,
The Property of Messrs. James and George Thomson.

The Clyde Bank Iron Ship Yard is situated at Govan, near Glasgow, and occupies upwards of five acres, and employs, in busy seasons, upwards of 1,300 workmen.

The use of iron for ship-building having almost entirely superseded wood (at least for all vessels above the smaller sizes), the large shipyards in the Clyde now build in this material; and from the proximity of iron and coal fields of great extent, the well-known abilities of Clyde workmen, and the advantages of the noble river, are enabled to compete successfully with any other parts in the kingdom.

Messrs. Thomson have recently largely extended their shipbuilding premises, which comprise extensive steam Saw-mills, Carpenters' and Joiners' Shops, Wood Moulding and Turning Shops, Steam Cranes, &c. The machines in use, such as Punching and Shearing Machines, Lathes, Plate Rollers, &c., are of the most massive and improved descriptions.

The Clyde Bank Iron Ship Yard is carried on in conjunction with the Clyde Bank Foundry and Engine Works, also belonging to Messrs.



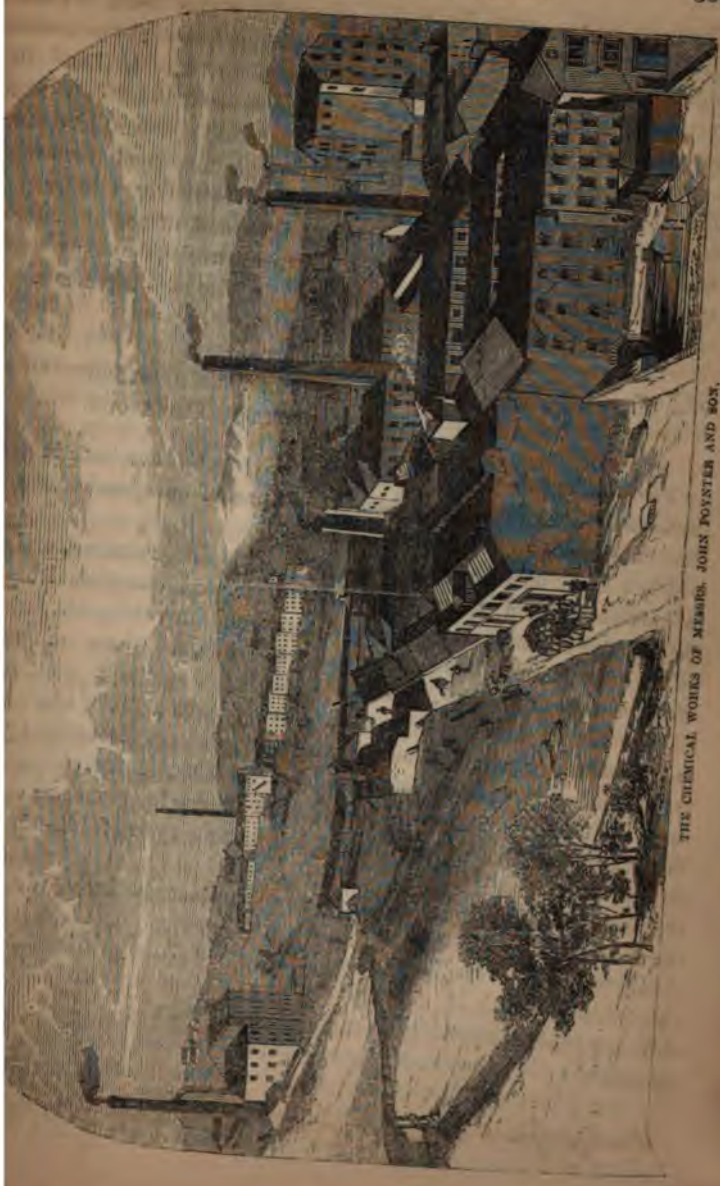
THE SHIP-BUILDING YARD OF MESSRS. JAMES AND GEORGE THOMSON.

Thomson, where every description of marine engine work is produced. In the account of the Engine Works, a number of celebrated steamers built by Messrs. Thomson, will be found enumerated; and in the recently published edition of "Bownes' Treatise on the Steam Engine," several elaborate drawings of machinery made by them will be found.

Adverting to the now common application of iron to shipbuilding, Dr. Fairbairn renders this homage to that valuable metal:—"It is from this material [iron] that we derive the instruments of our civilization; our progress in useful art depends upon our knowledge of its application; ships of 400 to 700 feet in length, and bridges of equal span, could never have been attempted in its absence; in its varied forms and conditions, it supports our wonderful industry, and is the soul of our commerce. Viewing it in this light, how important is the development of every new law and every new application which tends to secure its economical employment! and looking at the continued progress in our knowledge of its properties, and its conversion from the crude ore to its final condition in its various applications, we may say that the iron age of the world is come, nourishing a never-failing and widely-extending industry,—an industry which has raised this highly-favoured country to the position of the leader in practical science, and the pioneer of progress."

The Slips where the vessels are prepared will attract the attention of the visitor. The building-slip is prepared for the operations thus:—The ground having been made clear and tolerably clean, a row of blocks is laid down from end to end of the slip, the length of the blocks being transverse to or across the slip. The blocks are of oak, placed one upon another, to the height of three or four feet, and secured together. These piles of blocks are ranged along the slip, at distances of five or six feet apart, and the upper surfaces of all the blocks are so adjusted that they shall be in one straight line, but inclining slightly downwards towards the river, the inclination being about five-eighths of an inch to a foot of length. Great care is taken in laying down these blocks, as they form the support,—the workbench, in fact,—on which the whole ship is afterwards built, the keel being laid down immediately upon the blocks.

The business of a manufacturing chemist is one of great importance



THE CHEMICAL WORKS OF MESSRS. JOHN POYSTER AND SON.

and is scarcely understood by many persons. The difference betwe drugs and chemicals is vague and indeterminate; and the professio the chemist and druggist, and the apothecary, are, in like manne generally confounded together in popular estimation. The acid alkalies, salts, and oxides, used in largest quantity, are made on a sca which requires complete manufacturing arrangements, with lar furnaces, stills, and other apparatus. Such is the case in respect o sulphuric and nitric acids, chlorides of lime and of sodium, alum, & These articles are made at large chemical works, such as those w have now the pleasure to introduce to the notice of our readers.

John Poynter and Son,
Chemists and Drysalters, 72, Great Clyde-street, Glas Works, Dellingburn-street, Greenock.

The Works possessed by this firm at Greenock have been in existe for about thirty years, and during that period have undergone vario and extensive alterations and additions.

They carry on a large business in the chipping, grinding, and boili of Dyewoods; in the manufacture of animal charcoal, ivory blac phosphatic manures, roll and flowers of sulphur, saltpetre, sulphate zinc, phosphate of soda, arseniate of soda, sulphate of ammo mineral naphtha, iodine, and iodide potass.

The Works are very extensive, covering three acres of land, and w spacious and convenient buildings for carrying on the various proces connected with this particular business. Three lofty chimneys p out the locality of the Works; several hundred persons are employ and the steam that puts in motion the machinery is of 140-horse pow

Messrs. P. and W. MacLellan, Clutha Iron Works.

The Clutha Iron Works are situated in Adelphi-street and R street, both south of, and near to, the Hutchesontown Bridge. T Works in Adelphi-street were built by Messrs. P. and W. MacLel sometime after the establishment of their business in 1831, as Gener Ironmongers and Iron Merchants, in those extensive premises, 127 a 129, Trongate, and 13, New Wynd, where their warehouses are situate They also commenced the manufacture of Railway and Contractor

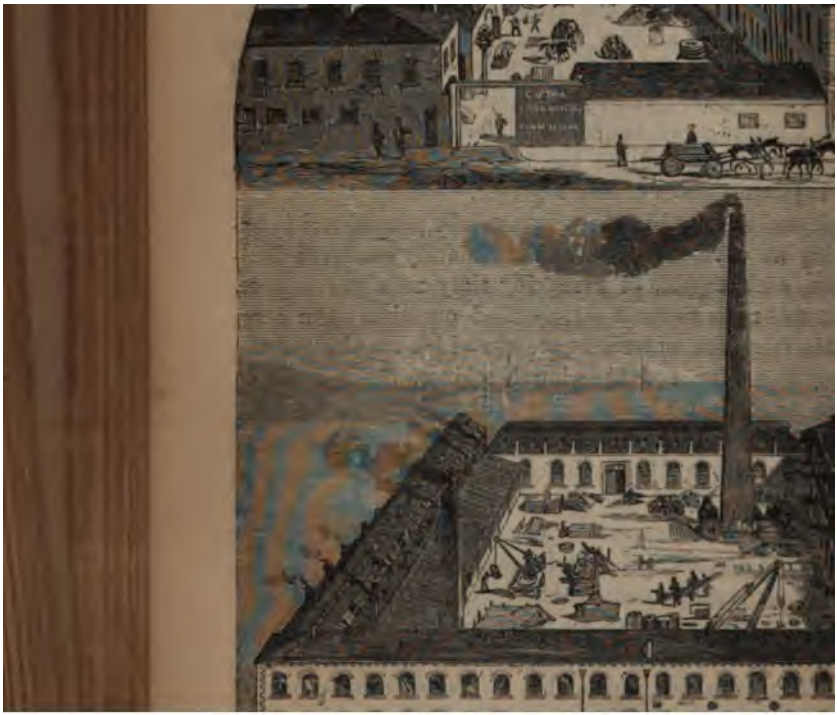
plant, which has been followed by marked success; and the demand for this class of goods has been so great, that they have been obliged to enlarge their Works so much that they now cover an extent of two and a half acres, and afford employment to upwards of 800 workmen.

The facilities possessed for expediting their manufactures are great; the steam-power employed amounting to nearly 100-horse.

Entering the Adelphi-street Works, and passing the Offices, situate on the left, the visitor finds himself in a large roomy shop, set apart for the manufacture of Bolts, Nuts, and Wood Screws. Passing through a large folding-door, we enter another room of similar extent, in which are numerous Spike and Rivet-making Machines at work, with large furnaces for heating the iron. The pin or spike is a bolt of round or square iron, with a round head, employed in fastening the cast iron chair (in which the rail is laid) to the transverse wooden sleeper. Rivets are used in joining plates of iron together.

At the extreme end of this shop the visitor will be pleased and interested in observing at work, powerful and ingeniously contrived Nut-making Machines, each capable of producing sixty nuts per minute. Passing out from this room to the right, we find ourselves in a large open shed—visible from the entrance gate—in which are situated the Iron Rack, large Punching and Shearing Machines, Spike Pointing Machines, and an Angle Iron Straightening Mill. From this we enter the large shop, parallel to the other two. This shop extends the entire length of the Works, and is filled with costly Planing, Turning, and Slotting Machines. Here also is the department for the manufacture of Railway Buffers; a contrivance, as our readers may know, for receiving the shock of a coalition between railway carriages, consisting of powerful springs, or prepared india-rubber. Great care is requisite in providing the very best materials for these buffers. In the rooms immediately above this, are the Fitting Shops, Bolt Screwing and Wood Screw Cutting Departments, which, by a novel adaptation of machinery, are performed with a beauty and celerity we have not noticed elsewhere.

The firm are extensive manufacturers of all kinds of railway and other screw-jacks. They are also the patentees and manufacturers of a Steam Pile Driving Engine. This engine is admirably adapted for driving piles in the erection of viaducts, bridges, docks, quay walls, &c.,



and foundations of all kinds; its lightness and portability give it an advantage over any that have hitherto been made. The steam is supplied from a boiler (either stationary or portable), carried through a malleable iron pipe and a patent flexible tube, by means of which any ordinary distance of piling may be done without shifting the boiler. The pile driver can also be moved about to suit the position of each pile. The superiority of this machine is striking when compared with those worked in the usual manner by manual labour. A single machine can be worked by one man, and is capable of lifting a ram one ton weight to an elevation of eighteen feet eight times per minute, thus performing in one hour as much work as five or six men could do in eight hours by the old system. These engines may be used for either single or double rows of piling, and have, we understand, been used on some of the most extensive contracts in the kingdom, such as the Broomielaw Harbour; Victoria Docks, London; Boyne Viaduct, Drogheda; Silloth Docks, Carlisle; and the Inverness Railway Viaduct.

Proceeding now to the Works in Rose-street (which were built in 1860), we find ourselves in a spacious quadrangle, 210 feet square, three sides of which are occupied by the Smithy; a high, well-ventilated range of buildings, 40 feet wide, with about 100 fires ranged along each side of the shop, while along the centre of the floors, at convenient distances, are to be seen in active operation four powerful steam-hammers, and at the time of our visit (April, 1861) three others were about to be erected. This may give our readers an idea of the work done in this department.

On the left of the open space or yard, covered by an overhanging roof, and adjoining the main building, are ranged the numerous machines used in this department for drilling, punching, shearing, grinding, &c., and also large piles of raw material from the rolling mills, cut into suitable pieces for the various manufactures.

On the right of the yard, again, may be seen rising the naked ribs of some huge iron roof; while a little further on, dusky workmen are busily employed, amid the "din of hammers," in forming the beams of some railway bridge, that may, ere long, afford safe passage for the rapid train, freighted with human beings, as it speeds, puffing and snorting, over some deep ravine or angry tumbling river.

The Smithy is joined by large Painting and Packing Shops, from which we ascend to the Carpenters' Shops,—spacious rooms, 210 feet long, and 40 feet wide. Thence, also, to the manufactory and storerooms for Railway and Signal Lamps, for manufacturing which the Messrs. MacLellan are justly celebrated, and which are used on most of the Railways in the United Kingdom, and several of the Continental Railways also.

At the period of our visit Messrs. MacLellan had in progress 1,300 tons of Malleable Iron Roofing, and 700 tons of Castings, for one order in India, to which country they had just despatched 1,000 sets of Wagon Ironwork.

The Works are managed with great ability, the utmost order, economy, and convenience being observable throughout. Both works are provided with large Derrick and Travelling Cranes. The operations are on a very large scale, and do credit to the enterprise and industry of our Northern fellow-lieges.

MESSRS. WOTHERSPOON AND CO., GLENFIELD STARCH WORKS, PAISLEY. WAREHOUSES, 46, DUNLOP-STREET, GLASGOW, AND 66, QUEEN-STREET, CITY, LONDON.

Although it is scarcely twenty years since these extensive Works were established, they are now by far the largest of the kind in the country, covering upwards of an acre of ground, and giving employment to upwards of 250 persons.

The Works are situated to the extreme south-west of the important manufacturing town of Paisley, and near to the foot of "Glenifer Braes," rendered famous by the poet Tannahill.

These Works are a series of brick, iron, and glass buildings, admirably planned, and having every appliance which science can afford for lightening the labour and improving the health of the workers.

A complete network of railways intersects the various departments, on which trucks are constantly employed transporting the materials used in the manufacture of the Glenfield Starch from one department to another, and the perfect system of supervision and division of labour are much to be admired, making the various operations join into each other like tenons into mortices.

The raw material from which the world-renowned Glenfield Starch is made is East India sago, which is chiefly imported by these enterprising manufacturers themselves. It may be remarked here that other starches are made principally from wheat, and on that account we think the "Glenfield Starch," independent of its superior qualities, has a claim upon public favour as not interfering with the food of the people.

There are two stoves for drying the starch, one of which is the largest in Scotland, or perhaps in the world. After the starch is dried, it is again returned by rail to the bottom of the hoist, whence it is raised to the upper floors to be packed in the small parcels, which, in their blue coat and green vest, are so well known throughout the country, and of which upwards of thirty millions are sold annually. The packing department alone is divided into four branches, the workers in which are females. Each department is spacious, clean, and perfectly ventilated.

The warehouse and its arrangements form a model of perfection. This part of the works is of recent erection, running through the centre of the premises; it is fireproof, and forms a bulwark between the two principal buildings, to prevent the spread of fire. At the end of this building, and opposite the gateway, is the Loading Platform and Machinery, at which half-a-dozen lorries can be entirely loaded within an hour.

Messrs. Wotherspoon and Co., we believe, were the first to introduce Show Cards, which have now become such essential ornaments in shop windows, and the manufacture of which is an extensive trade; they are also extensive advertisers; it is almost impossible to take up a newspaper or periodical of any character where one or more of their pithy announcements do not appear, costing them several thousands per annum.

From the high position which the Glenfield Starch has acquired, it is not to be wondered at that the proprietors have often had to raise actions in the Court of Chancery in England, and the Court of Session in Scotland, to suppress spurious imitations of their manufacture; but it is to be hoped that the Bill on Trade Marks, of this session, will mitigate this crying commercial evil.

We have often noticed audacious statements put forth by other starch makers, that their starches were used in the Royal Laundry, and one we noticed even went the length of saying his was used by special command.

VIEWS OF THE PREMISES OF MESSRS. WOTHERSPOON AND Co.

of Her Majesty; but we have the best authority for stating that no starch is used there except the Glenfield.

Messrs. Wotherspoon and Co., Confectionery Works, Dunlop-street; London Offices, 66, Queen-street, Cheapside.

The delectable establishment we have now to notice is one well known to the sweet palates of Glasgow, and almost every other place besides, both at home and abroad.

Persons accustomed to the small confection shops that smile upon us so invitingly in the principal streets of large towns, will be astonished to see the art of making delicate preserves and condiments carried on so extensively and so ingeniously as it is on the premises of Messrs. Wotherspoon and Co. Mountains of sugar vanish under the hand of the manufacturer; indeed it has been affirmed that double the quantity of sugar is consumed in this establishment, at the present time, than was used in the whole of Glasgow some sixty years ago; and at least three times as much confectionery is produced here, as was manufactured in all Scotland thirty years ago.

The premises in which this business is carried on are composed of four large stone buildings, which, we believe, were originally erected for some of the merchant princes during the golden age of West Indian slavery, but are now joined together, and with additions made to them by Messrs. Wotherspoon and Co., now form a manufactory measuring 160 feet by 70 feet, consisting of five stories. Each floor is a large open space, and connected by a handsome metal spiral stair. The basement and sunk floors are set apart for the heavy class of work. One end of this compartment contains a twenty-horse power engine, with revolving stones (three pairs), for grinding and crushing sugar. In the other part of the room there are a number of large vats, used for making jams and jellies from not less than seventeen different kinds of fruits. We believe the leading article in this part of the business is Marmalade. There are also a number of boilers and machines of various descriptions used in different processes of the work. Orange and lemon-peel are also preserved in this department in large quantities. Several very neat and apparently simple machines were shown to us; these are used

in giving different patterns to loz
receive a number of dies with vari
made of a very finely compounde
basement floor consists of a very ha
House and Show-Room. The first
portion is set apart for packing, s
the back division of the second flo
which are used in manufacturing co
copper, the whole of which are dou
by steam. The quantities of the di
work is really fabulous. The rem
quite a host of tidy girls, making
these articles were made of hard
instead of which they are made fro
gum, made into soft cakes, and, ins
into form by punches of different si
the already renowned "Wotherspo
and which are filled into packages i

The Messrs. Wotherspoon and C
both lozenges and comfits by machi

The upper floor is set apart for
of goods are dried. Some of the
longer time than others.

In this department there is a
polishing the hard confections. Thi
it revolves upon its own axes, and r
the same time. The confections ar
and come out at the other perfectly
facility for manufacturing the vari
work, enables the proprietors to s
shortest notice.

The Adelphi Biscuit Works,
The Property of Messrs. McCall and Stephen.

All of us are acquainted with biscuits, and have our palates occasionally regaled with Savoys, Gimblettes, Macaroons, Ratafias, and other delectable compounds of this class of unfermented breads—perhaps the most wholesome of the class; but few have seen, or have any idea of the processes by which they are made on a large scale by the aid of most ingeniously-contrived machinery.

The origin of the word is derived from the French *bis cuit*, "twice baked," because originally that was the mode of entirely depriving them of all moisture, to ensure their keeping; and although that process is no longer employed, the name is retained.

The Adelphi Biscuit Works are situated close to the equally well-known iron foundry of Messrs. MacLellan. The business was established in 1852, and by the aid of very ingenious machinery, the delicious article of food so familiar to us, is made in quantity and quality in a manner that would surprise those persons who have seen the primitive mode of making in use by bakers and confectioners.

Ship biscuits are especially made at this establishment, large quantities being supplied to emigrant ships, and all kinds are largely exported to distant quarters of the globe.

The use of this kind of bread on land is general, and some kinds are luxuries, but at *sea* biscuits are articles of the first necessity.

From the Store Rooms, in which the visitor will see enormous quantities of flour, he will be taken to the Mixing and Drying Departments, all conducted on the most cleanly and systematic principles. But the Bakehouse will astonish the beholder much more than any other part of the Works, for this is the very heart of the system. Here are twelve ovens, and two large travelling-ovens, joined by a biscuit-making machine. With a rapidity perfectly marvellous the flour undergoes its preliminary processes, and, subjected to the fiery ordeal, emerges in the shape of well-made nutritious biscuits. Everything is on a large scale on these premises: revolving mixing-pans, huge mountains of currants, eggs innumerable, butter, sugar, &c., meet the eye, and are used up in a marvellously quick manner, being replaced by constant supplies, all of the best quality.

THE ADELPHI BISCUIT FACTORY, THE PROPERTY OF MESSRS. MCDALL AND STEPHENS.

These Works are worth seeing, as there are none like them in Scotland, nor anywhere else, for aught we know to the contrary.

Messrs. James Muirhead and Son, Goldsmiths, Silversmiths, Watch and Chronometer Makers.

The premises of Messrs. James Muirhead and Son are situated in Buchanan-street and Exchange-square, and the buildings rank among the finest in Glasgow.

The business has been established since 1816, and has been conducted on "progressive" principles, marching well with the times, and always furnished with a stock that may well defy competition. The magnificent Show-Room is a very Golconda, with diamonds flashing from every point, and the choicest articles of jewellery spread about in profusion. Here may be seen diamond bracelets, fit to gird the arm of a sovereign, and precious stones of every hue and size, invitingly framed in rings, chains, crosses, and ornaments for a boudoir and drawing-room. The best treasures of the Continental capitals are ransacked to supply this "gallant show." An agent is specially employed at Paris to procure the latest novelties in the gold-workers' art.

The stock of articles is by no means confined to what is termed "jewellers' goods," but Messrs. James Muirhead and Son are well reputed for their Clocks, the best quality of electro-plated, turret, and other clocks, lever time-pieces for ships.

On the first floor of the premises in Buchanan-street may be seen a magnificent display of Clocks, Statuettes, and costly Ornaments. The firm are patentees of an invention to wind clocks without the removal of the glass shade.

The clock in the tower of the mansion of Robert Napier, Esq., at West Shandon, was made by these gentlemen.

Visitors who are desirous to take back to their own country some *souvenirs* of glorious old Scotland, cannot do better than provide themselves at Messrs. Muirhead and Son's with the Scotch pebble jewellery, so much admired, and so reasonable in price.

The Rumford Iron Works, the Property of Mr. John Finlay, Wholesale, Retail, and Manufacturing Ironmonger.

The manufacturing premises belonging to Mr. John Finlay are situated at 33, Great Hamilton-street; the Show-Rooms and Offices are at 46, Buchanan-street.

Mr. Finlay is well known to the public of the United Kingdom as the inventor and patentee of the economical and powerful radiating Stove Grate, which received the distinction of an "honourable mention" at the Paris Exhibition.

This elegant grate is adapted for every description of room. They prevent cold air currents, back smoke, or other nuisance, giving complete control over combustion, so that a bedroom fire may be made to last over the hours of sleep.

Among the numerous articles made and supplied by Mr. Finlay, we may mention the patent self-coilng steel or wood shutters, of which he is sole agent; gas apparatus, gas fittings; lustres in bronze, ormolu, and crystal; Moore's patent glass inductions; Lyme Regis and other patent kitcheners; iron beds, plain and ornamental; kitchen ranges of the newest construction, to carry hot water to every part of the house; smoke and water jacks, boiling tables, charcoal tables; baths; moderator, oil, candle, and other lamps; best Colza oil; best sperm and whale oil; patent metallic wick candles.

On entering the premises in Buchanan-street, the spectator will see in the basement one of the largest stocks of Grates, Stoves, Chandeliers, &c., that could possibly be accumulated in such compass. The Metal Chandeliers, which are extremely beautiful, are manufactured at the works in Great Hamilton-street. These premises are admirably adapted for the purposes of the business, and have in constant operation a vast number of valuable drilling, punching, boring, clipping, and turning machines. There are several brass-foundries. Mr. Finlay is also a manufacturer of Mangles, which form an important item of his business. Upwards of 100 workmen are employed on the premises, aided by steam of 24-horse power.

Among the numerous hotels in Glasgow, we would particularly and most favourably notice

THE QUEEN'S HOTEL, GEORGE SQUARE,
PROPRIETOR, MR. McGREGOR,

as one eminently deserving the patronage of the public. This establishment is conducted in the most commendable manner, and the

QUEEN'S HOTEL, GEORGE-SQUARE, GLASGOW.

tourist may be well assured that his comfort will be studied to his perfect content.

These commanding premises occupy nearly one side of George-square, and contain 130 bed-rooms, 15 sitting-rooms, a magnificent coffee-room (45 feet by 24 feet), a very fine billiard-room, several bath rooms, writing-rooms, &c. &c.

The hotel was opened in 1850, and is, from its position, convenient to travellers by the Edinburgh and Glasgow Railway. This splendid

establishment is *pre-eminently the first* in Glasgow, and the proprietor one of the most worthy men we ever had the good fortune to meet. He is also the owner of Glengyle, at the head of Loch Katrine, Perthshire, the birthplace of Rob Roy, whose father was laird and chief of the McGregors. This romantic property is still in the possession of the McGregors, now represented by the gentleman under notice.

> "Macgregor is there, and for ever shall be
> The Lord o' that region, romantic and free;
> Nae chieftain or baron, frae Kirkwall to Kyle,
> Can vie wi' Macgregor, the Laird o' Glengyle."

For LOCAL HANDBOOKS we refer our readers to our AGENTS, MESSRS. THOMAS MURRAY AND SON, the publishers of some of the best topographical works. We allude especially to the GUIDES TO THE HIGHLANDS, THE CLYDE, and THE LAND OF BURNS, which are most truthful and interesting. *No tourist should leave Glasgow without purchasing these excellent Hand-books, which have the additional recommendation of being remarkably cheap.*

We recommend our readers to visit, while in Glasgow, the establishment of Messrs. James McClure and Son, Publishers, Printsellers, and Artists' Colourmen, by special appointment to the Queen.

This most respectable house of business dates from 1825, since which period it has been most successful in obtaining a first-rate connexion.

The stock comprises every article used in drawing and painting in oil and water colours, and all works of repute in the Fine Arts.

The premises are in Buchanan-street (100), Royal Bank Buildings.

We beg to acknowledge assistance derived, for our commercial aspect of Glasgow, from a well-written book entitled COMMERCIAL ENTERPRISE. To all engaged in trade we recommend this work.

The *Walks around Glasgow* are full of interest, both from the historical and antiquarian associations connected with many celebrated spots, and the beautiful sylvan scenery in which, generally speaking, they are situated. From Glasgow to Campsie Glen, about eleven miles north of the city, affords a delightful excursion. *Hoop Castle*, three miles from Glasgow, will afford the lover of the picturesque a rich treat. Bothwell Castle-bridge, Hamilton, and Cadzow, although at some distance, are easily attained by railway, and offer to

the pedestrian numerous attractions. We could enumerate many other spots; but as the steamers and railways give extraordinary facilities for penetrating into all parts of the neighbourhood, we will confine our remarks to these expeditious routes, commencing with

Excursions on the Clyde.—Under this designation we propose to

HAAG CASTLE.
(From a photograph by W. Tod, Esq.)

conduct the visitor on this famous river, and to point out some of its glorious attractions.

The steamers which ply on the river chiefly for passenger traffic are numerous. Each season brings new boats on the river, yet the increase in number is not so great as are the improvements in the internal fittings and external decorations of the new craft.

There are officers on the wharf, whose special duty it is to make the vessel cast loose and move on the "minute" their time is up; and that minute, although advertised only by a few of the boat-owners, is so widely made known in the pages of Murray's "Time Tables," that off they must move, and not the less so, as many of the boats trust to gain increase of passengers from the train leaving Glasgow for Greenock an hour after their steaming off from the

Broomielaw; and although the distance from Glasgow Bridge to Greenock Custom House be but twenty-two miles, the stoppages by the way are many, and more are the times when their engines must be slowed, lest the diving-bell operations be disturbed, the dredging-machines set a rocking, or the mud-flats be made to prematurely discharge their loads of semi-liquid silt, which are meant for subsoiling the fields, and not for redistribution on the waters of the Clyde.

The upper wharf of the river on the city side is enclosed by shed and railway; the access through by gate and postern is well guarded by members of the "civic force," who, when time is up, bar the way, and no entreaty from the belated tourist will move the civil functionary to let him do other than "wait for the next boat;" and the rule and its practice are good, as it indoctrinates punctuality. As the vessel moves slowly on amidst the shipping, the traveller will be enabled to enjoy the animated scenery at leisure. He will remark, extending from Windmill Croft downwards, a shed of magnificent length, breadth, and height, being nearly 760 feet in extent, 72 feet in span, with iron roof, and lighted from above; and this excellent structure is so enclosed that all within remains safe. On the same side, and running along the wharf, extend for many hundred yards the rails of a short line formed to unite the harbour with the railways which encircle the city on the south and west, which is chiefly for the conveyance of the minerals, coals in particular, and for the safe and rapid loading of vessels with these staple exports of the Clyde. At short distances are erected cranes, which, by steam-applied pressure, raise the heavy wagon, containing three or four tons of coal, lower it bodily till near the hold of the ship, then, unfastening the door, its contents are, with advantage to the cargo, allowed to tumble through.

Opposite these cranes is a slight indenture on the wharf, where many of the Cunard line of steamers, and many also of the finest and longest of the screw steamers produced on the Clyde for Southampton demand, have received their engines and been completed for sea. The gigantic shears which tower over the tiny dock indicate the objects they are placed there for; and the extensive workshops behind, but across the narrowed street, ring with the clang of many hammers.

ctive in the finishing betimes of those marine palaces which month fter month are sent thence, steam up, down the river.

URTHER down the river usually lie steamers, paddle and screw, receiving their machinery, by aid of the massive crane erected there; and across the river are usually moored the steamers whose fires are out.

A line drawn from the deep-sea wharf and the monument to Nelson, half a mile above the Broomielaw Bridge, would embrace the city proper of Glasgow; hat eastward and north of the monument being known as Calton, and vhen near the Rutherglen Bridge, as Bridgeton; that north of the leep-sea wharf and inland is named Anderston, and toward the vestern extremity is Finnieston. Opposite to the monument, but cross the river, lies Hutchesontown; then Gorbals, Laurieston, Tradeston, and Maxweltown; the houses stretch to the westward ill the river-banks become occupied by the mineral railway, before oticed, and the numerous ship-building yards below it.

To the westward and northward of Napier's well-known dock lie the ands of Stobcross.

Beyond the green fields of Stobcross, and trending westward and outhward, runs the fine range of buildings recently erected, and named St. Vincent-crescent, being the most western suburb which the growing ity has thrown out in that quarter; and few others there are which an boast of a nobler range of dwellings, all tenanted fast as finished; nd such was to be looked for, the river view being extensive and nteresting.

Below stretches Kelvinhaugh, as the rich field under the bluff to the northward and this reach of the Clyde and the banks of the river Kelvin is called; and on the height above it is the house of Yorkhill.

Behind the extensive shipbuilding yards (see Commercial Aspect) run the houses forming the village portion of Govan.

Above the Govan Mill stands the parish chuch, built in 1826, from a design supplied by James Smith, Esq., of Jordanhill, a philanthropic, scientific, and influential inhabitant of the parish. The tower and spire were drawn to resemble those of Stratford-upon-Avon.

Beautiful as may be the site and spire of the manse and church of

Govan, yet more attractive to the stranger may have appeared the Paxton-like structures which, at the junction of the Kelvin and the Clyde, adorn the large shipbuilding yards of Tod and Macgregor, the enterprising firm mentioned in our Commercial Aspect of Glasgow.

The Kelvin has a course of upwards of sixteen miles in length, and few rivers are more useful in giving power to labour-saving machinery than it is, or more beneficial to the people of Glasgow and its suburbs, as the walks by its very pretty banks from the "point-house" opposite Govan to the "pear-tree well," some three miles up the stream, and onwards to the magnificent aqueduct by which the ship canal connecting the Forth and the Clyde spans its course, are much frequented

KELVIN BRIDGES, TWO MILES WEST OF GLASGOW.
(*From a photograph by W. Tod, Esq.*)

on the summer evenings, more especially on that of the first day of the week, there being a continuous stream of smart lads and smarter lasses all inhaling health on the wooded banks of the Kelvin; and this range of rambling has been lately largely extended in that the classic "banks of Kelvin" with its splendid "beechen shades" are now also open to the plebeian public, these grounds having been acquired at great cost to form the West End Park, for the westward extending city of Glasgow. This fine park was obtained for the public

rom the Kelvingrove property at a cost of £71,946, and £10,000 addi-ional were expended upon its construction. It is laid out and planted ith great taste, and is a favourite resort of the public. The palatial nansions forming the terrace overlooking the park, with roofs in the rench style, are built upon feus from reserved ground which promises o be an important source of revenue to the Municipal Corporation. rophies of the Crimean war, which are placed in these grounds, are epresented in the engraving.

TROPHY GUNS FROM THE CRIMEA.

On the western bank of the Kelvin, and a short way above the Meadowside shipbuilding palace-like yards, stood of old the country seat long believed to have been that of the Archbishops of Glasgow, their castle standing under the shadow of the spire of St. Mungo; and centuries ago, their rustication on the quiet Kelvin side would have been pretty reasonably far apart from the hum of a city then so much in embryo, that it stood second in all but ecclesiastical importance to the venerable but now only coal-producing, fair-holding burgh of Rutherglen, whose castle was then one of strength, though long since

razed to the ground; but recent topographers assert that this house was not the bishop's, but the more recent erection of Hutcheson, the munificent founder of the hospital, whose lands give name to the south-eastern suburb of Glasgow.

The ship-yard on the Kelvin, and the mills on the river-bank above it, partially conceal from the view of the tourist on the Clyde the more ancient portion of Partick, a place now of considerable population.

For some miles below Govan the river-bank is occupied with the country-houses of merchants, who may there enjoy the ease their labours have earned them; and that some little dignity is also claimed therewith, may be inferred in that the parks are not over-crowded, each resident seeming to enjoy fair elbow-room.

The Partick bank of the river before noticed as having been so largely improved by the produce of the river-dredging machines, is that on which the shipbuilding yards have within the last few years located themselves.

Inland, beyond the Whiteinch yards, and by the western limits of Partick, may be seen Dowanhill, near it the fine site of the Royal Observatory, westward the vast building of Gartnavel, the newly erected Asylum for the Insane, and below it the finely-placed house of Jordanhill.

On the right, considerably below Jordanhill, and near the river-banks, stands the extensive mansion of Scotstoun, the residence of Miss Oswald, acquired by her relations of the same name, who were influential merchants in Glasgow. The handsome residence on the river, opposite to Scotstoun, is that of Elderslie, built there towards the close of last century by Mr. Speirs, who had purchased it in 1749 from a direct lineal descendant of Sir William Wallace, of Elderslie, the well-remembered patriot who sacrificed his life in his earnest endeavours "to set Scotland free," and whose brave example then gave impulse to the national movement which, but one generation after, won on the field of Bannockburn the liberation of their country. Elderslie, the patrimony of Wallace and of his forefathers, is a short way west of Paisley, and nearly four miles from this Clydeside mansion, which so modestly lays claim to the name of the birth-place of the "Wallace wight."

The towing paths on the river-bank having been for upwards of

forty years so used by the public, forecloses the right of the waterside proprietors to bar the path of the public when disposed to walk that way, although it may mar the amenity of their policies; and a case in point has been lately so decided where the burghers of Renfrew claimed a footpath through the domains of their most wealthy river-side neighbour.

Landward, from the old towing path on the Clyde, may be seen at frequent intervals green banks of elevated soil, raised apparently to guard the fields beyond from the inundation of the river when in flood.

From Renfrew upward the river Clyde is enclosed like a canal, as, when the tide is full, it almost appears to be, but when the ebb has flowed to its lowest the dykes are laid bare, and their cost, extent, and constant need of repairs are then well shown, when the closely-built stones are seen to be loosened by the ceaseless dash of the paddle-raised surge, whose force may not be hard to estimate, as, if the incessant fall of a drop of water, minute as it may be, will eat into the hardest rock, much more rapid may be the effect of the ever-stirring wash excited by the steamer traffic, and aided by the flux and reflux of the tidal wave.

Near to Scotstoun has been placed a red buoy, marking a reef of rocks which there run across the Clyde, and on which the Glasgow steam-ship got fast in the night of April 11, 1854.

Elderslie House was anciently named the King's-Inch, there probably having been an island there formed by the Cart or the Clyde, as Inch, in Scottish topography, implies that there an island is or has been; and the King's-Inch the place may then have been named, as the "Stuart kings of Scotland" were the Lords of Renfrew, the present royal representative of the line of the Stuarts of Scotland being Baron of Renfrew, which ancient royal burgh lies modestly behind the place of Elderslie, and, although within a few hundred yards of the Clyde, is but little seen.

Renfrew, a royal burgh since 1396, had, two centuries ago, a commerce employing sixty sail, pretty well in that day, but now wholly gone, although the worthy burghers still retain "Deus gubernat navem" as the motto of their little town. To its proximity to the rich coal and iron-fields of Lanarkshire the modern city owes its prosperity.

A green spot near Elderslie House, marked by a clump of trees, indicates the site of the ancient castle of the Stuarts of Scotland, when he, as the Baron of Renfrew, held court, and vestiges of its extent remained till razed by the builder of the new house of Elderslie. There is a short cut running up from the river Clyde towards the ancient burgh, which is used for the occasional discharge of grain imported for local consumption, the line connecting Renfrew with Paisley, distant three miles, also having rails laid to the wharf; but this traffic apart, the "Puddich Burn," as the cut is called, is usually occupied by the spare mud flats of the Clyde River Trust.

The district round the ancient burgh has many historic remembrances from its former regal connexions; the knock or small hill in the neighbourhood being to this day known as the spot where the Lady Marjory, daughter of Robert the Bruce, and wife of the Steward of Scotland, fell from her horse when hunting, when, by the Cesarean operation, Robert II. was cut from the womb of his mother. The spot was, till the close of last century, marked by a stone cross, well known to the country-people as King Blearie's stone, the eye of the infant having been impaired by the surgeon when he was so prematurely introduced to the country he lived to rule over.

Near Renfrew is a wharf, where steamers touch, being the termination of the short line of railway opened in 1837, from Paisley to the Clyde, and which for some time was worked by locomotives, but for many years past has been abandoned to horse-haulage.

Below extend the domains of Blythswood House, the prospect from which Pennant declared to be "the most elegant and the sweetest of any in North Britain." Not far is the junction of the river Cart with the Clyde, an iron railing and stone wall running a short way up the Cart, but the walk kept patent to the public. At a short distance up the Cart is a wooded clump, known as Colin's Isle, and said to have been formed by a raft of timber which took the ground there.

The Cart here, joining the Clyde, is more considerable in appearance than in reality, although at the "Water-neb," as quaintly styled by the natives of Paisley, it pours into the Clyde the united streams of the White Cart, the Black Cart, and the Gryffe, all meeting not far from the Clyde. The White Cart has a course of upwards of twenty miles, rising in the parish of Eaglesham, running by Cathcart near to

Glasgow, moving the numerous mills of Pollokshaws, receiving the river Levern from the Neilson district, flowing past Crookston Castle, a spot romantically connected with the happier days of Mary Queen

CROOKSTON CASTLE, FROM THE WEST.
(From a photograph by W. Tod, Esq.)

of Scots, "when love was young and Darnley kind," passing by Hawkhead, the seat of the Earls of Glasgow, and, centuries ago, giving title to the noble family of Ross of Hawkhead; passing the ruined keeps of Cardonald and of Blackhall Castle, being spanned by the aqueduct of the Paisley canal; giving motion and a "linn in little" to the mills at Seedhill, Paisley; becoming tinged with every shade but those which are pure as it flows sluggishly through that busy town, till passing under the railway-bridge it becomes "the Sneddon," where "the shipping" of Paisley does convene, continues its course to Inchinnan Bridge, and there commingling with the Black Cart and the Gryffe, becomes lost in the Clyde.

The Black Cart empties the strath of country running westward, issuing from Castlesemple Loch, a picturesque sheet of water about eight miles distant, and not far from those of Lochwinnoch and Kilbirnie, whose waters are emptied by the Calder, whence issues the

of Paisley may be plainly descried, and to the
of Gleniffer," made so classic in that distri
unfortunate Tannahill.

On the right are Dalmuir Works, a branch e

conducted by the late William Dunn, who was the architect of his own vast fortune. Southward of Auchentoshan, not far from the river-bank, and finely placed on a slight hill, stands the white house of Dalnotter, the view thence being one of the loveliest and most extensive to be had on the Clyde.

Westward of Dalnotter Hill, a short way from the Clyde, and embowered among trees, is the village of Old Kilpatrick, a burgh in old times, the range of hills in the background being known as the Kilpatrick hills, there being another parish a short way to the eastward, and named New Kilpatrick—Kill, Cill, Cell, denoting where priest or hermit may have prayed or wrought miracles.

Near the village of Old Kilpatrick is Erskine Ferry, affording passage for man or beast, and sufficient for the traffic as there carried on from the adjoining shores of Dumbarton and Renfrew. Inland of the ferry is the village of Barrgarran, noted at the close of the seventeenth century for the last conviction for witchcraft, three men and four women having then suffered at Paisley for that alleged crime, and the girl "tormented" was named Catherine Shaw, who, as she grew up to womanhood, and in safer times, was "a witch" at the spinning of fine yarn and production of thread, thus becoming the creator of that extensive branch of trade now pursued by the manufacturers of "Paisley thread."

For many miles past, the steamboat passenger may have observed the line of the Forth and Clyde Canal, running westward and not fa from the Clyde, having diverged from the navigation carried on to Glasgow when within two miles of that city, and at Bowling Bay unites with the Clyde, affording passage for vessels of 150 to 200 tons, and a depth of water of 8½ feet, the distance from Grangemouth on the Forth being 32 miles.

Having described the upper section of the navigable portion of the Clyde, we will take up the tale of description at the wooden pier, within near view of the comfortable old Inn of Bowling.

THE CLYDE.

BOWLING BAY, DUNGLASS, DUMBARTON CASTLE, THE LEVEN, CARDROSS, FINLAYSTON, THE RIVER CHANNEL, NEWARK CASTLE, PORT-GLASGOW, HELENSBURGH, ARDINCAPLE, THE GARELOCH, ROW, SHANDON, GARELOCH HEAD, ROSENEATH.

Journeying on, the little pier, harbour, and railway wharf, near to Renfrew, are now passed, with the prosperous-looking building-yards near the town, and a short way below are the domain and house of Blythswood, and the junction of the Cart with the Clyde. These passed, the tall steeple of the High Church of Paisley, the lofty roof of its ancient Abbey, with the smoke of many mills, may be seen three miles off to the left, and behind them the braes of Gleniffer and the hills of Fereneze, the former classic ground, with the weavers and clippers of that busy district.

BELOW the Cart is the House of Park; further down, the green woods around Erskine House, and across the river lie the finely-placed houses of Mountblow, Auchentoshan, and Dalnotter, the latter near the Clyde, and, from its low but green hillside, affording a view of the Clyde of extraordinary beauty. Inland lie the hills of Kilpatrick, the manufacturing village of Duntocher on their eastern slope, with the ancient village of Old Kilpatrick in the near foreground, localities of no ordinary repute, as Duntocher was a Roman station, the birthplace of Patrick, the patron saint of Ireland, who was a priest at Kilpatrick; hence its name, and who, after evangelising "the Emerald Isle," had returned to his native district to rest in peace, where the cathedral of Glasgow now stands.

Here the ship canal connecting the Clyde with the Forth enters the western river.

At the Canal wharf, Bowling, was the ferry where, of old, parties

from the Leven and westward used to take boat for Glasgow, and then the rental paid by the tacksman was very considerable; but the opening of the new pier, near Dunglass, a little further down the river, has sadly interfered with this local traffic. Still, the snug old inn of Bowling is a very choice one for the visitor to spend an afternoon at.

Between Bowling and the ancient fortress of Dunglass, a considerable space has been partially enclosed from the Clyde, here widened out immensely, and in the winter season is the mooring-place of most of the fleet of steamers which so crowd the waters when the day is long and the weather bright. The railway pier at Bowling is of recent erection, that spot of ground having been acquired by the Marquis of Breadalbane.

There are very few places on the Clyde more pretty, within such easy and frequent access, as the wooded hillsides stretching between Glenarbuck and Dumbarton.

The railway, seen close to the river bank at Bowling, is that conveying the tourist from the Clyde to Lochlomond, locally known as the Lochlomond Railway, but in the pages of Bradshaw reported as the Caledonian and Dumbartonshire Junction, incorporated June, 1846. Its length, with branches, is 35 miles, but is completed only between Bowling and Balloch; the Clyde and Lochlomond, 8½ miles, with double rails, and opened for traffic July 15, 1850: the remainder of the projected undertaking has been abandoned, the power of compulsory purchase of ground, &c., having expired.

From the deck of the steamer, and the tall windows of the saloon at Frisky Hall, are well seen the ruined Castle of Dunglass, of late years surmounted by an obelisk commemorative of the name of Henry Bell, the builder and owner of the Comet, the first steamer on the Clyde, as will be more fully noticed. Of the ancient fortress, little record is given in Scottish story; but prior to their annals it was one of the outworks of the Romans, having been built near the western extremity of the wall raised by them from Abercorn or Blackness on the Forth, and running through Carriden, by Falkirk, Camelon, Castlecary, Cadder, and Duntocher, terminating near to Old Kilpatrick. The course was pretty nearly that now run by the ship canal, as from Camelon near Falkirk, the length of this great Roman work being

about 40,000 of their military paces, or nearly 36 of our Eng
miles.

SKETCH ON THE CLYDE.

This vast wall, formed to repress the "roving barbarians of
northern wilds," was defended by forts placed nearly two miles ap
with extra ones on the Clyde and the Forth, as those of Dungla
Blackness, Carriden, or Abercorn.

At the village of Duntocher, a few miles eastward of Bowling, w

be seen, in fair preservation, a Roman arch over the stream there; and the walls yet remaining at Dunglass are of considerable extent, and strengthened by a tower, not high, but still apparently weathertight, as the wine-store of its present garrison lies there.

The rugged stone walls of Dunglass are ivy-clad, and the apex of the steep enclosure crowned with the monument to Henry Bell, on a base high enough to give a view extensive and most beautiful; but ancient and interesting as are these ruins, they are not open to the public, being the quiet abode of a private family.

The house of Auchentorlie rises above the old castle of Dunglass, and the views from its windows must be extensive and beautiful; to make the new structure seen from the river, a clearing has been made of the fine old trees which so richly clothe the hill-side; but for no great way, as above the belt rise the smooth and grassy slopes of the green mountains, as such heights would be named in Ireland; the ascent is easy, and the view will richly repay the labour of climbing them.

The shipping trade attracted to Bowling by the canal junction with the Clyde has caused a village to spring up near it; the tempting beauty of the spot has also induced many summer visitors to seek residences there; the three months' ticket for river conveyance between Glasgow and Bowling being two pounds ten shillings. The village directly behind the railway wharf is named Little Mill, and noted as the *locale* of an extensive distillery; westward is the village of Milton.

SKETCH ON THE CLYDE.

The tourist, on passing Erskine Ferry, above Bowling, will notice

that the southern shore of the Clyde is richly timbered, and that th bank is trim and lawn-like in appearance; the long reach from th ferry to below the old castle of Dunglass being the domain of Erskin House, the seat of Lord Blantyre, and acquired by his predecessors i 1703. Erskine is said to mean, etymologically, the "green risin ground," and if so, is well descriptive of the locality. The estate an district was held by the Erskines, Earls of Marr, till 1638, when it w disposed of to Hamilton of Orbiston, and by that family to Stuart Blantyre, in 1703. The Marr family were barons of Erskine in 145 and their title one of the most historic in Scottish annals, and ofte held by cadets of the Royal family.

THE CLYDE AT FULL TIDE.

A little below the modern house of Erskine, the "green rising ground" inland is crowned by an obelisk, erected by the nobility gentry, and tenantry of the district, in memorial of the virtues Robert Walter, Lord Blantyre, who was slain at Brussels in 1830 Below the obelisk-adorned height is the ancient house of Bishopton

given in the list of baronial residences as one of the seats of Charles Stuart, Lord Blantyre.

The river Clyde has become wide as a frith from Bowling downwards; but, broad as the expanse appears to be when the tide is full, the channel is by no means so when the dykes are laid bare, and the wide stretch of alluvial deposit exposed to right and left. From opposite Erskine House to a considerable distance below Dunglass extends a broad-based and well-built sea-wall, at regular intervals surmounted with pillar and perch, which clearly define the river course, and mark also its mileage: the even numbers read down the river, the odd numbers show up the river. From the ancient fortress of Dunglass to the nature-formed castle of Dumbarton stretches a wide extent of rich land but little above the water level, apparently recovered from the river bed, and overlooked by the hill of Dumbuck, which is the western limit of the Kilpatrick hills.

Looking northwards between Dumbuck and Dumbarton, the tourist will behold the vast bulk of Benlomond, as it looms largely over the vale of the Leven and above the Queen of the Lochs of Scotland.

Dumbarton rock has been insulated by the Clyde or the Leven, but its formation little needed such ditch-like defences to make it the castle of the west of Scotland, having been so from the dawn of history, or before it, if believed to be the "Balclutha" of Ossian—the "Dun Briton" of the aboriginal tribes; the pharos-crowned rock of the Roman "Theodosia,"—the fortress capital of the Attacotti of "Strath Cluyde;" known in the eighth century as a fortress bestowed with the earldom of Lennox on Maldwin, by Alexander II.; surrendered to Edward of England after the death of the Maid of Norway; obtained by Balliol in 1292; reduced by the English in 1296; held for them by the "fause Monteith" in 1305-6; and made the temporary prison of the "Wallace wight" when betrayed by that recreant friend; maintained by Fleming of Cumbernauld in 1333, in the Scottish right, after the slaughter at Halidon-hill; captured in 1425 by a son of the Regent Albany; besieged in 1481 by the fleet of Edward IV. of England, and defended so bravely by Sir Andrew Wood, of Leith, as to gain for him the lands of Largo in Fife; held by the insurgent Earl of Lennox against James IV. till reduced, after more than one siege; made the Royal Naval Station for the West of Scotland on its capture; and by the Regent, during the

Loch Leven—her course was stopped at Dum
and captured May 2, 1571, by Captain Thomas
maintained as one of the four royal fortresses
the treaty of union with England; and visited
Victoria, in 1847.

Dumbarton Castle rises two hundred and fo
of the Clyde and the Leven, which unite at its

staff, and where is now built the temporary perch, marking a spot selected for observation in the slowly-accomplishing Ordnance survey of Scotland. The entrance to the Castle is by a road from Dumbarton skirting the north and eastern base of the rock, although tradition has it that a nearer footway at one time lay over the *débris* covering its northern face; but the most ready access to the tourist would be to land by the ferry boats, which hover at the mouth of the Leven for passengers from the steamers, whence he may be put ashore for sixpence; and if a party, the boatmen will wait their return from visiting the old castle, to facilitate which object one or more of the idling garrison will soon pick up the strangers, and assume the office of cicerone.

The outer defences of Dumbarton Castle do not look over-strong, but so far inland, and within seas so well defended by floating wooden walls, such may not now matter much, and the fortress has been useful of late years as a storehouse for the guns now in process of removal to the different places necessary for the defence of the coast. The house of the governor is pleasantly placed, but not over picturesquely, say some writers; and above it lies a long, very long flight of well-worn steps, usually little more than a yard in width, in many places less, by which the curious visitor must wend his way upwards till he reach a little plateau in a cleft of the rock, where the armoury is placed, and further in, the comfortable-looking old barrack-rooms. The small triangular space near the armoury has been formed into a little garden plot, and thoroughly sheltered must be that pretty spot. Arms for 1,500 men are kept here, all bright and burnished in warrior-like array.

GATEWAY IN DUMBARTON CASTLE.

But the sight of sights in the Castle is the huge two-handed sword, which has been for centuries shown as the weapon of Wallace.

the champion chief of Scotland; and certainly it would need the a of a wight strong, as all tradition and history report that hero to h been, to wield a brand so long and so heavy. The preceding view presents the gateway between the upper and lower part of the Cast

The view from the heights of Dumbarton is of extraordinary bea and extent, in respect that when placed on the rocky peak no int vening object hinders the wide extending horizon being swept the eye, which may be carried over the vale of the Leven, by t mountains of Ben-Lomond, the highlands of Arrochar, the "bowli green of Argyle," the "pharl" hill of Ardentinny, the hills of Cow Goatfell looming far to the west, the fine braes above Greenock, t opening frith of the Clyde, the hills of Kilmacolm, the "green risi banks" of Erskine, the lowlands of Renfrewshire, the steeple a stalks of Paisley, the upward reach of the river Clyde, the mur clouds hanging over the city of Glasgow, the braes of Kilpatrick, t course of the Roman Wall, the ancient castle of Dunglass, the pre hill of Dumbuck, and the ancient but now thriving burgh Dumbarton.

The river Leven, *i. e.* "smooth water," sweeps round the base of t rock of Dumbarton, and runs a course of little more than five, as t crow flies, but more nearly ten miles if measured from Dumbarton Balloch by its meandering course, as it conveys to the Clyde the wat of Loch Lomond, and which are so pure as, for nearly a century pa to have caused numerous bleachfields and printworks to be crowd upon its banks, which are finely wooded, and everywhere beautif Smollett, the great writer of the eighteenth century, was born Dalquhurn, where

> "On Leven's banks, when free to rove,
> And tune the rural pipe to love,
> He envied not the happiest swain
> That ever trod Arcadian plain."

Towards the close of the last century the manufacture of cro glass was begun in the burgh, and until of late years the cones we nearly as conspicuous in the view on the Leven as was the castle at mouth, or the mountain on the Loch whence the transparent riv issued.

If the glass-makers are defunct, the shipsmiths are all alive, a

e old burgh is in a thriving condition, from the thousands of "the ns of industry, embrowned with toil," whose stalwart arms wield the eting hammer in the numerous ship-building yards which crowd the wer shores of the Leven, and whose numbers have so multiplied to necessitate the erection of a new suburb to the burgh named ennyston.

SKETCH NEAR THE LEVEN.

The shore and uplands which line the banks of the Clyde, below e junction of the Leven, form the parish of Cardross, and a very

pleasant drive may be had from the Dalreoch station, at the Dennyst suburb of Dumbarton, to Helensburgh, at the mouth of the Garelo the distance is eight miles, and the conveyance a commodious and w appointed three-horse 'bus, which plies in connexion with the rail at Dalreoch from Bowling: the route is a pretty one, and the numb of roadside fares to be picked up at Cardross, Geilston village, and numerous villas by the way, are considerable.

Cardross is affirmed by etymologists to mean "the castle on the p montory," and tradition alleges that such an edifice existed on the of land formed at the junction of the Leven with the Clyde. T wooded height which rises to the north of the road from Dalreoch Helensburgh, and within a mile of Dumbarton, is known as the Ca hill, and believed to be the spot where stood the castle in wh Robert the Bruce breathed his last, upon June 7th, 1329, in the fi ninth year of a life drawn to a premature close by the wasting eff he had so long, so gallantly, and at last so successfully made redeem the freedom of his country, and to establish the claim of family to rule over it.

The service of steamers plying between Glasgow and Dumbart are in connexion with the Dumbartonshire Railway and the steam on Loch Lomond; one of them, to promote the circle of traffic, runs up Loch Long to Arrochar, and there exchanging passengers with Loch Lomond boat, which touches at Tarbet.

Opposite to Dumbarton Castle lies the West Ferry, now known the Lang Bank station on the Greenock Railway, and where passeng may cross by boat from the Leven to the southern or Kilmacolm sh of the Clyde. Below this ferry the traffic channel of the river tet southward, and, emerging from the heavy cuttings through the h stone tunnel of Bishopton, may be seen the curling vapour of the l motive as it puffs on, eastward or westward, to or from Glasgow Greenock, the line having stretched inland to command the traffi Paisley; and from the tunnel westwards it follows close by the bank the Clyde, the margin between the river and the Kilmacolm heig being so scant as to necessitate the engineer to scarp out a place his permanent-way from the rocky hill-side, and not unfrequently embank the line against the action of the tidal surge.

Kilmacolm parish, which slips down upon the Clyde between thos

skine and Port-Glasgow, is said to be the largest in the shire of Renfrew, although but six miles square; it is also reported to be the coolest, as it receives the cold winds from the Ardrossan shore through the bleak district stretching above the Clyde, and inland of Greenock. Westward the Lang Bank ferry station is the old house of Finlayston, finely placed among embowering woods, and on the hill-side above the Clyde. The district, or barony, was originally named Dennyston, and four centuries ago became the patrimony of the earls of Glencairn, the nobleman of that title having become the leader of the Covenanters of Scotland, the patron of John Knox; and his mansion on the banks of the Clyde was long celebrated as guarding the silver cups with which the stern Reformer administered the sacrament of his Lord, when those "who feared the face of men" scarce dared to partake of that hallowed rite.

From Finlayston to Port-Glasgow, the southern shore of the Clyde has its picturesque hill-sides covered with a succession of country resi-

NEWARK CASTLE, ON THE YARROW.

dences, which become more numerous and villa-like as they approach Port-Glasgow.

Newark Castle is beautifully placed on the small bay eastward of

Port-Glasgow, and its appearance is such as to command the attenti of the tourist.

Port-Glasgow on the Clyde was originally named New-Port-Glasg having been built by the burghers of the city of St. Mungo, wh desirous of making their shipping independent of the harbour char at Dumbarton, Greenock being then in its infancy; they acquired 1668, from Sir Patrick Maxwell of Newark, twenty-two acres of la with the right to form a harbour, and soon after obtained a charter incorporation from Charles II., when magistrates soon followed po to levy tolls and harbour dues. In 1695 the rising port was form into the parish of Port-Glasgow, about a square mile of ground be disjoined for that purpose from the landward parish of Kilmacolm; b it was 1718 before a parish church was built: in 1710 the Custo returns of Port-Glasgow were greater than those of Greenock, a then enjoyed both the deep sea and the coasting shipping trade of t city whence it was named; in 1775 the burghs of Newark and Po Glasgow were united under one civic rule; in 1803 their municip rights were defined and extended; and the passing of the Reform B of 1833 made Port-Glasgow a burgh of parliament, joining wi Kilmarnock, Dumbarton, Rutherglen, and Renfrew, in returning o member.

Port-Glasgow being of so recent erection, and upon ground limited, has been closely built together, and was unusually town-li in appearance from the first; the streets being straight, cross at right angles, and the houses many-storied and white-wash rubble stone-work being the order of architecture in the seventee century; but those recently raised in the suburbs are ashlar-front and more than ordinarily neat, whether as to situation, or the fr and flower gardens which luxuriantly thrive around them, the s being fertile, and the site sheltered by the green hills which tower closely over the burgh, that for weeks in winter the sun is reported rarely troubling them.

Parklie, Carnegie Park, Clune Park, are the names of the m conspicuous mansions between Finlayston and Newark Castle; a the hills inland of Port-Glasgow are little more than 400 feet height, or twice that of the "cliffs of Sebastopol," in the Black Sea which such interest has been directed. Girt Hill and Knock-hair H

above Port-Glasgow, are fertile to their summits, and between them have a glen, variously known as Devol, or Deval, where the finer villas of the inhabitants of the burgh are situated.

The long banks of Cardross Bay, the cockle-bank below Port-Glasgow, and the Greenock bank abreast of Garvel Point, occupy so large a portion of the water-way between the shires of Dumbarton and Renfrew, and are so nearly bare at ebb-tide, as to make the steamers plying between Glasgow and Helensburgh pursue a devious track, although the attempt has often been made to cut across from Ardmore head to Port-Glasgow, avoiding Greenock, and gaining upon the railway time on the run upwards to Glasgow.

The steamers, on leaving the handsome custom-house quay of Greenock, sweep downwards to clear the tail of the bank; hold their course through the crowded array of shipping which find safe anchorage there, prior to their final departure from the Clyde, keep eastward

VIEW ON LOCH LOMOND.

by the shore off Roseneath Point, stretch off to the low-water pier of Helensburgh, of considerable length, irregular, and slippery.

Helensburgh is most accessible to the seaside visitor, lies on the sunny side of the Frith, has large extent to build upon, is near the fine

INVERSNAID FALLS, LOCH LOMOND.

of his lady, Helen—hence Helensburgh. The lan
from the Clyde towards the gentle-rising heights, a

le and a half, the terrace-like slope being, to a considerable extent,

PORT OF INVERSNAID.

over by houses, more generally cottages, with garden-plots; the ts which run up the hill-side being usually sixty feet in width, the blocks which mark their re-like sections being apparently it one acre square, giving the a more rural-like appearance its later rivals in seaside mmodation can afford to offer. population of Helensburgh, in ch 1851, being given as 2,230, at ent may be double that number, he inhabitants are so wholly n to house-letting, that each eholder crams his tenement tenants when he can get them, all the other villages on the e reaches of the Clyde.

enry Bell having been employed, 808, as the architect of the s at Helensburgh, became their nt, keeping the establishment as an hotel till his death, in

FALL OF INVERSNAID.

The problem of steam navigation being solved by Robert Ful
Henry Bell addressed himself to prove his plans on the Clyde, and
1811 employed Mr. Wood, of Port-Glasgow, to construct a steame
38 feet in length, 11½ feet beam, and 30 tons burthen, which
launched on July 18, 1812, and named the Comet.

Ardincaple Castle, the residence of the Dowager Duchess of Arg
and the only property which that noble family hold on the Hel
burgh shore, lies above the opening of the Gareloch, and is
first of a succession of fine and large mansions which ad
that pretty arm of the sea known as the Gair or Gareloch,
the short loch.

The shores of the Gareloch are of singular beauty; the little ham
seaside mansions, and handsome villa-like erections at the Row be
richly wooded, the site of the manse being specially beautiful; and m
picturesquely placed are the cottage-like abodes of Roselee and Ar
caple cottage, as lying on the promontory of the Row; and upwards
the Lochhill side, are spread the country abodes of merchants of
west, of means sufficient to surround their seaside houses with la
and woods, and verge enough—advantages rarely met with on
Clyde.

At Shandon, on the Row shore, there is a cluster of prettily-situ
and full-tenanted cottages, with the finely-placed villa of Shandon-le
beyond them; and, perched on a terrace-like elevation, has been rea
the modern castle-like structure of West Shandon, the abode of Rob
Napier, Esq., who has spent lavishly and judiciously on the princ
pile; and imposing as is the appearance without, it is richer in artis
decorations, pictures, and furnishings within, yielding proof of t
wealth gathered in from the plans first worked out into use by pe
Henry Bell.

The sail up the Gareloch is beautiful, as is also the drive from Ard
caple, by Row and Shandon, to Gareloch-head, where has long be
the site of a well-patronised hotel, as the wharf where the lo
terminates is close at hand.

The head of the Gareloch is beautiful; and sweetly situated are t
houses which adorn its gently-rounded shores, the *quoad sacra* pari
church and village inn improving the picture, which has the Alps
Arrochar, the mountain height of the Cobbler, and the Argyle bowlin

green, "*lucus a non lucendo*," the least smooth spot in a most rough district. From the head of the Gareloch to the shores of Loch-Long is within two miles, the road to Arroquhar for Loch-Lomond, or for

SKETCH NEAR LOCH-LONG.

Loch-Fine, leading up its shores; while another route leads southward by the western banks of the Gareloch and the peninsula-like shaped point of Roseneath, as the district is named, which intervenes between the Gareloch and Loch-Long.

The situation of the inn and houses, church and village of Arroquhar is picturesque and beautiful, and the locality is no small favourite with excursionists.

Roseneath, some etymologists affirm, was called Rosna-choi "the Virgin's Promontory," from a nunnery alleged to have hallow the extremity of the peninsula; but as no vestige can be traced of existence, the more ancient name of Rhos-noeth, "the bare pen sula," may be the truer title.

The parish belongs to the Duke of Argyle, the small estate Baremnan excepted; and that "Macullumore," of the West Hi lands, held there a baronial residence named the "Easter Hous probably to distinguish it from the "Wester House," on Loch-Fi The remains of the ancient house referred to stand where the mod stables are built, an erection which shows to more advantage fr the Firth of Clyde than does Roseneath Castle, which fronts to t Gareloch, and was erected at the beginning of the present centu The estates around this magnificent ducal residence are extensi the trees magnificent, the walks beautiful. The road which le from the ferry at Roseneath, across the hill to the village of Kilcr gan, at the mouth of Loch-Long, is one of surpassing interest fo the rich and varied views afforded on its short extent.

The numerous iron ships turned out of the Clyde building-yards a usually sent to the Gareloch for the adjustment of their compasse the anchorage being good, the loch land-locked, and buoys laid dow at the needful distances.

Glasgow to Oban.—The tourist takes his departure for this excu sion from the Broomielaw harbour, passing about two miles from th city *Govan*, which we have already described. About two miles belo Govan, on the south side, is *Shieldhall*. We pass successivel afterwards, *Renfrew*, *Old Kilpatrick*, *Bowling*, *Dumbarton*, *Cardro Greenock*, *Dunvon Inellan*, *Toward*, *Rothesay*.

At *Loch Ridden*, the course of the steamer is towards the south ward; the vessel usually stops at the pier of Tynabruich. The Kyl begin gradually to expand as the vessel proceeds, until on approachi Ardlamont Point, on the mainland, the tourist has doubled th northern division of the island of Bute. The new prospect which no opens embraces the south side of Bute, the distant shores of Ayrshir and the island of Arran. The peninsula of Cantyre lies on the le and after doubling Ardlamont Point, the steamer enters the open of Loch-Fine. Passengers disembark at the quay of Ardrishaig,

small village at the south end of the Crinan canal. The loch extends about two miles further to the north, and terminates where the village of *Lochgilphead* is seen built round its upper extremity. The passenger proceeds by the Crinan canal, and passes the opening of Loch Craignish. A group of islands are next seen, and soon after the vessel sweeps round the southern point, the pleasant town of Oban is suddenly disclosed, with its whitewashed houses curving round a semicircular bay capacious enough to float with ease and safety the entire British navy. The steamer is laid alongside of the hull of a large ship, which on being, some years ago, brought in here in a sinking state, after it was abandoned at sea by the crew, was converted by the thrifty ingenuity of the magistrates of the burgh into an excellent jetty. The first object to attract the eye of the traveller on arriving in the harbour is the Caledonian Hotel, a large and commodious building in the centre of the town, and whither, accordingly, tourists proceed with as little delay as possible, in the height of the season, to secure their quarters for the night.

NEAR OBAN.

Marquis of Breadalbane and Robert Campbell, Esq.,

VIEW OF OBAN.

who have afforded every facility for its extension and by granting feus for building dwelling-houses and

and during the summer months it abounds with strangers, either passing through the town on their way to other parts of the country, or making it the centre of their excursions, for which it is well adapted by its possessing throughout the season daily means of communication with one or other of the favourite places of resort. Many of the houses are let to visitors repairing to Oban for sea-bathing. Some of the shops are of a superior description. The central part of the principal street is built under the shelter of the lofty cliffs of sandstone conglomerate overlooking the town. One of the most conspicuous buildings is the Free Church, occupying a commanding site on the acclivity to the right of the principal street. This elegant structure is in the early English style, with a low Norman tower, after a design by the late Mr. Pugin, and was reared chiefly at the expense of the Marquis of Breadalbane.

The most interesting object in Oban is Dunolly Castle, a picturesque ruin crowning the bold headland closing in the bay on the north-west.

Betwixt the town and the castle a huge wave-worn mass of conglomerate springs abruptly from the shore, betwixt the sea-beach and the cliffs, and is known by the name of *Clach-a'-choin*, or the Dog-stone, the tradition being that it was used by Fingal as the stake to which he bound his dog Bran. Be this as it may, it is the vestige of a pre-Ossianic period, when the land and the water bore a different relation to each other than at present, and the waves which lashed the base for this isolated pillar were rolled back by the tall cliffs beyond it. As to the position of Dunolly Castle, "nothing can be more wildly beautiful."

From the heights above Oban a magnificent seaward view is obtained. In the foreground is Kerrera, with its strangely unequal surface, drawn like a bowstring across the semicircle of Oban bay; and away to the left delightful peeps are obtained of the soft and inviting shores of the Sound. To the west is seen the opening of the Sound of Mull, with the lofty mountains of that island rising in the background. The low green island of Lismore, the "Great Garden," lies far-extended in the north-west, towering over which are seen the majestic ranges of the "misty Morven," and the remote summits of the hills of Ardnamurchan, with the Linnhe Loch receding towards the distant north. Other

points of view bring the hills of Appin and Barcaldine, the
shores of Loch Etive, and the
masses of Ben Cruachan
matchless panorama of
mountain.

HEN her Majesty visited th
Highlands, she was greatly
with Oban, which she saw
blaze of sunshine; and Prin
on the same occasion, expr
surprise that the people of thi
should resort to foreign lands
of fine scenery when the Highlands of Scotland presented
rare attractions.

The immediate neighbourhood of Oban and the sur
country offers considerable attractions to the botanist.

Few parts of the coast of Scotland afford advantages for
of Marine Zoology equal to those enjoyed in Oban bay
neighbouring lochs and sounds. The district is therefore f
visited by dredging parties, and its localities are constantly r
in books of natural history as affording specimens of the z
medusæ, echinoderms, annelides, crustaceans, molluscs, a
invertebrate animals of the sea-shore, now so zealously st
naturalists and industriously collected for the vivarium.

The tourist should not fail to visit the island of *Kerrera*,
are the ruins of Gylen Castle. About three miles from
Dunstaffnage Castle, which commands a magnificent view
believed to have been originally the seat of Pictish princes.
short distance of the castle is Connel Ferry, where the ch
Loch Etive becomes narrowed by the approximation of th
from a breadth of a mile to a space of two hundred yards, ca
tide, which rises here to a height of fourteen feet, to ebb and f
prodigious impetuosity. Even this narrow passage is interr
a ledge of rock, the top of which becomes visible at half-tide,
this impediment the current surges with resistless force, and
noise which is sometimes heard, even in calm weather, at the

of several miles. The picturesque aspects of Loch Etive have been vigorously and truthfully delineated by the pen of Christopher North (the late Professor John Wilson of Edinburgh), part of whose description is here introduced:—"Loch Etive, between the ferries of Connel and Bunawe, has been seen by almost all who have visited the Highlands but very imperfectly; to know what it is you must row or sail up, for the banks on both sides are often richly wooded, assume many fine forms, and are frequently well embayed; while the expanse of water is sufficiently wide to allow you, from its centre, to command a view of many of the distant heights. But above Bunawe it is not the same

NEAR OBAN.

KILCHURN CASTLE, LOCH AWE.

loch. For a couple of miles it is not wide, and it is so darkened by

Buachaillebhe, though far off, is still a giant, and comes forward, bringing with him the Black Mount ar so that all seem to belong to this most magnificent lochs. 'I know not,' says M'Culloch, 'that Loch Eti ornament without an infringement on that aspect of which it presents throughout. Nor is there one bays on the shore, which might elsewhere attract a swallowed up in the enormous dimensions of the su tains, and the wide and ample expanse of the lake. —hear fearfully solitary—situated far up in Glen Eti when at the upper extremity; and if there be a tree, few places on the shore, it is unseen, extinguished humble mountain flower by the universal magnitude the full power of Glen Etive you must walk up till glen. When in the middle of the moor, you see dwelling indeed—perhaps the loneliest house in all

On the shore of Loch Etive, opposite to Dunstaf 400 yards to the north-west of a bold range of cliffs known as Cragan Righ, or the King's Rock, a dou eminence rises on the pebbly beach of the bay of Tradition assigns to this spot the site of the ancie of Berigonium. It is about two miles from Connel least deserving of a visit as affording an interestin Vitrified Fort, where the results of the unknown proce

Returning by railway from Glasgow to Edinburgh, as far as POLMONT JUNCTION STATION (22 miles from the modern Athens), we will accompany the reader on the

LINE TO PERTH AND DUNDEE.

FALKIRK, LARBERT, DENNY, and STIRLING have been noticed in our preceding pages; also the renowned Castle of Stirling, the theme, for ages past, of romance and song.

SKETCH AT STIRLING CASTLE.

From Stirling the traveller can enjoy a series of excursions to the most glorious scenes in one of the most picturesque countries in the world. Railways, steamers, and coaches offer their services to the fortunate sight-seer. The coach route from Stirling to the TROSSACHS is rich, varied, and beautiful throughout—the distance 26 miles.

Doune, on the route to Loch Katrine, may be reached by a road from the railway station at Bridge of Allan, or direct from Stirling, by a route crossing the Forth at the Bridge of Drip, two miles above the ancient burgh. This route is very lovely, abounding in wild and picturesque scenery, and full of interest.

Towards Callander the country becomes more Highland in character,

the vales less broad, the hills more steep, the streams more rapid, t
the route is adorned
the mansions of nu
rous families of we
and distinction.

NEAR CALLANDER.

The neighbourhoo
Callander is so att
tive, and the hotels
the village are so g
that tourists gener
select it as a reside
for some days. A
short mile northward
Callander is the well-known cascade, the "Bracklinn," formed by
waters of the Keltie.

At *Dun-bo-chastle*, an eminence near Callander, may be traced outlines of an ancient fortification; from hence there is a rich and commanding prospect eastward by the Straith of the Forth, towards Doune and Stirling. Ben Ledi, nearly 3,000 feet above the ocean level, is nearly two miles west of Callander. This mountain is accessible to the top.

The crowd of tourists who visit the romantic country around Loch Katrine has occasioned good hotel accommodation. An excellent building of this character has been erected at the foot of Glenfinlas, above the Brig o' Turk. From the upper rooms of the New Trossachs Hotel may be obtained an extensive view of the vale eastward by

BRACKLINN BRIDGE, NEAR CALLANDER.

Loch Vennachar, southward towards Menteith, westward by Loch Achray, and northward by the gorge whence the river Turk issues

SKETCH AT THE TROSSACHS.

from Glenfinlas; while that at the Trossachs is finely placed above the shore of "sweet Loch Achray," under shade of "the bold Cliffs of Benvenue," and looking southward over "fair Menteith," Aberfoyle, and the "Rob Roy M'Gregor" land. The coach road from Stirling to the Trossachs is good and well kept, the traffic in the season being quite sufficient to maintain it so.

SKETCH AT THE TROSSACHS.

The river Teith becomes considerably increased in size when it receives, at Brig o' Turk, the river of that name, though why so named, the oldest inhabitant of the district cannot tell.

Passing the Brig o' Turk, the tourist will see the meeting of the

INCHMAHOME, LAKE OF MENTEITH.
RUINS OF THE PRIORY WHERE MARY, QUEEN OF SCOTS, WAS EDUCATED.

waters of that brawling stream with the broader flood of the Teit
which flo
westward fr
Loch Achra
and so cl
and still as
look like a n
row canal co
necting t
waters of Lo
Achray wi
those of Lo
Vennachar.

BRIG O' TURK.

Following t
excellent road westward, the tourist soon reaches the shores and

" —— nears the copsewood grey
That moans and weeps on Loch Achray!"

This sheet of water has been most appropriately termed "lovely" by Sir Walter Scott; for where shall the tourist

"—— find in foreign land
So lone a lake, so sweet a strand?"

Achray is the name of the farm at the head of the Loch, and near the base of Benvenue, and means the "level field," the breadth of the field or level ground being unusually great in this "land of the mountain and flood." Loch Achray may be about two miles in length by less than one in breadth, its lower extremity two miles westward of Loch Vennachar, and its upper little more than a mile southward of Loch Katrine, the celebrated gorge of the Trossachs intervening between Lochs Achray and Katrine. A road runs along the northern shores of Loch Achray, and leads directly through the Trossachs to Loch Katrine.

territory;" and well does t
appellation, as it has been
a "wildering scene of mount
disorderly groups."

In this wild spot many a la

e most copious descriptions are given of this beautiful locality. omond; the sister Loch, we have already alluded to in our

LOCH KATRINE.

pages; but we may add, for the information of the tourist, that ners which ply upon the lake are commodious, well-appointed. d out or the ce of first- omers, e sea- y are loaded vater's Glen ere the n in ad- when

ROB ROY'S CAVE, AT LOCH LOMOND.

full on *Ellen's Isle*, is the upper prolongation of the waters of

Loch Katrine, the glens and hills of that wild district having formed p
of the original patrimony of the M'Gregor family, now the property
James McGregor, of which the well-remembered Rob Roy was a ca
The hills closing down at the top of Loch Katrine, are known as
"Braes o' Balquhidder;" and singularly bleak, and wild, and high t
are to be called "braes," that word being, in Scottish phraseolo
usually applied to pastoral slopes, green, smooth, and of more moder
elevation.

Resuming our places on the Railway Train from Stirli
to Perth, we pass the Bridge of Allan, Dunblane, Kinb
Greenloaning, and Blackford stations, arriving (31½ miles fr
Polmont Junction Station) at Crieff Junction Station, whe
there is a short Branch to Crieff.

Crieff has been, through all Highland history, a place of very co
derable local importance, placed as it is at the head of a vale so r
and fertile as Strathearn, and at the opening of the most important a
most frequented of the passes into the western and northern Highlan
It is a burgh of barony, and used to display an "erect" symbol
baronial rule, in a "tree," known to the Gaels of the district as t
"kindly gallows o' Crieff," which these Celtic reivers or drovers w
wont to salute in passing with a "God sain (keep) you, and may t
Teil tamn you." This relic of the good old times is reverentially p
served, as also the iron stocks.

The environs of Crieff are singularly attractive. Besides the beaut
of *Ochtertyre*, the grounds around *Monzie House*, in the strath runn
to the west of five hills, on which Crieff is placed, are well worth
visiting, as are also the paintings which enrich the picture gallery
that mansion. The green hill named the Knock, rising immediat
behind Crieff, is finely wooded, and the carriage-drives round
western face in particular, and within the policies of Ferntower, aff
numerous views of great extent and of extraordinary beauty—look
down upon the house of Monzie, beyond on Ochtertyre, Glentu
and the rich strath through which the Earn so gracefully sweeps; w
the mountain Benvorlich, the Aberuchil hills, Glen-Artney, the Ben
of Strowan, Torluim, Drummond Castle, Muthill, Culdares, Auchter
der, and the Ochill range. Eastward, on the fine old coach road

Perth, are the highly ornate gardens, grounds, and mansion of *Abercairney*, the residence of one of the oldest and most influential of the untitled families of this highly aristocratic district.

Drummond Castle, the lion show of the many fine residences around Crieff, lies about two miles to the south-west, and on the highway to Stirling. Singularly romantic as is the situation of this ancient castle of the chief of the Drummond clan, yet the building itself has no extraordinary merit to lay claim to, as it is the grounds which surround, and the splendid gardens which stretch below it, that entrance the gaze of every visitor; and most so when, entering the causewayed court, leading to the ancient fortress, the tourist advances to a terrace, and sees spread out in all their extent and beauty, acres on which the stores of horticultural science and hordes of lordly wealth have been judiciously expended and lavishly bestowed, and that where Nature has been singularly propitious in seconding these most successful attempts.

Between Crieff Junction Station and Perth we pass the following stations: AUCHTERARDER, DUNNING, FORTEVIOT, FORGANDENNY,—reaching Perth at the distance of 47 miles from Polmont Junction Station, and 69¼ miles from Edinburgh.

PERTH, an ancient royal burgh, a thriving manufacturing town, a sea-port, the sub-capital of a large portion of the kingdom, and *par excellence* the FAIR CITY, is situated on the right bank of the Tay. Occupying the centre of a spacious plain, it is surrounded in every direction by soft and far-stretching declivities, whose sides, thickly ornamented by bower-like villas, hedge it in with a splendid cincture of picturesque and beautiful scenery. Boasting of the most remote antiquity, Perth is hallowed by many fine old recollections; and it is almost impossible to say whether, by a visit to it, sight or sentiment is most to be gratified.

At both sides of the town there are beautiful pieces of public ground for the recreation of the inhabitants, which, having been formerly isolated by the waters of the river, on which they now only border, are respectively called the North and South Inch. A bridge of ten arches, extending over a clear water-way of 590 feet, connects the city with a suburb called *Brigtown*, but which is a separate burgh or barony, under the name of Kinnoul.

Of *Gowrie House*, the scene of a well-known mysterious incident in

Scottish history, most unfortunately not a vestige remains; the wh
of that fine old mansion having been taken away, to afford room f
splendid suite of county buildings, in the Grecian style, which
occupy the place.

Perth, before the Reformation, contained an immense numbe
religious houses, chapels, &c. One of the most distinguished of th
was the *Blackfriars' Monastery*, situated at the north side of the to
but now utterly eradicated from the ground. The stranger will
visit, with melancholy interest, even the site of this house, so remark
for the assassination of that accomplished and beloved mona
James I.

The *Inches* are pieces of ground above all praise. The South I
is delightfully variegated with trees; and the post-road approaches
town through it by a beautiful avenue, which is the admiration of ev
traveller. The No
Inch is perfectly ba
but it has all the ch
which ordinarily
taches to a spaci
expanse of fine gr
sward. From it, m
over, the views up
river and towards
hill of Kinnoul are pe
liarly fine.

NEAR PERTH.

Perth, or as it u
to be called, from
church, St. Johnsto
has been the scene
many incidents of n
besides those mentio
as its siege and c
ture by Robert Br
and many transacti
with which it was c
nected in the time of the great civil war. But to recount these wo
be but to copy the pages of history.

The environs of Perth are peculiarly rich in objects of historic and picturesque interest. The road to Crieff, which proceeds directly westward, passes, at the distance of three miles, *Ruthven Castle*, otherwise called *Huntingtower*, now the property of the Duke of Atholl, but formerly the chief residence of the Ruthvens, Earls of Gowrie. It consists of two towers, now united by other buildings, but formerly separated by a space of three yards, which obtained the name of the Maiden's Leap, in consequence of having been leapt across on one occasion by a daughter of the Earl of Gowrie.

About a mile and a half farther on, within the woods around *Methven Castle*, the road passes on the right the scene of the battle of Methven, fought in 1306, and in which Robert Bruce was defeated. To the left, at the distance of a mile from the road, is the parish village of *Tippermuir*, to the east of which is the scene of the battle of the same name, fought September 1, 1644, by the Marquis of Montrose, who gained a decisive victory over the Covenanters, and immediately after took possession of Perth.

The Almond, a tributary of the Tay, opens up some fine scenery. On its banks, at the distance of about six miles from Perth, we find *Lynedoch*, the seat of Lord Lynedoch. The vale is here beautified by much fine wood. A little way above the house, the river receives the waters of a little stream, the *Brauchie Burn*, on the bank of which is a spot consecrated to love and pity by the popular tale of Bessie Bell and Mary Gray.

The *Leys of Luncarty*, the scene of a famous battle in 976, between the Scots and Danes, are situated on the west bank of the Tay, at the distance of four miles from Perth.

The house of *Scone*, the seat of the Earl of Mansfield, who represents the old family of Stormont, is situated about two miles from Perth, on the other side of the river. It is a heavy modern building, occupying the site of the ancient palace where the kings of Scotland, at an early period, used to be crowned. At the north side of the house is a hillock called the *Moothill*, said to have been composed of earth from the estates of the different barons who here attended the early kings, and on which, in all probability, parliaments used to be held. About fifty yards from the house there is an old aisle, the last remaining portion of the *Abbey of Scone*, containing a magnificent marble monument to a

Viscount Stormont. At a little distance farther stands the old mark cross of Scone, surrounded by a wilderness of pleasure-grounds, whi have come in place of the ancient village.

The hill of Kinnoul, remarkable for its picturesque appearance, ri to the height of 632 feet, about a mile to the east of Perth. presents a bold and craggy front towards the city, and is broken i

SKETCH NEAR PERTH.

two tops, the cleft between receiv the appellation of *Windygoul*. the rugged face of the crags th is a cave, called the *Dragon-h* said to have been a skulking-pl of Wallace. On the slope to t east lies *Kinfauns House*, one the principal show-houses in t county, on account at once of beautiful situation and environs, t the fine collection of books and p tures which has been amass within it.

Dunsinnan Hill is about eig miles directly north from Perth. is a hill of a conical form, rising the height of 1,084 feet above t level of the sea. The top is flat a verdant, as are also its sides, thou much broken by projecting mas of rock.

The road from Perth to Dundee passes along the *Carse of Gow* so celebrated for its fertility. This is an argillaceous plain of abo fifteen miles in length and four in breadth, bounded on one side by t Tay, dividing it from Fife, and on the other by a range of hills. Fr geological appearances, it may be inferred that the space occupied the Carse was formerly an estuary or inland lake, dotted here and th with islands, which still rise a little above the plain, and bear t appropriate denomination of *Inches*, as Inchyre, Meginch, and Inchta

Having briefly described Perth and its neighbourhood, we w pursue our railway journey to Aberdeen on the

SCOTTISH NORTH-EASTERN LINE.

This railway, not long since known as the "Scottish Midland" and "Aberdeen" Railways, now amalgamated, leaves the Central Station at Perth, where it soon parts with its feeder for Methven, and approaching the broad Tay, sends westward the independent branch for Birnam and Dunkeld; entering Strathmore, at Coupar-Angus, it sends a short line to Blairgowrie for the Mills on the Ericht; at Meigle a 'bus runs for Alyth, five miles north on the slope of the Grampians, and soon to have a branch line; while south the minor line runs by Newtyle for Dundee; near Glammiss a branch line goes N.E. for Kirriemuir; at Forfar is a short pause; and as this place will be described in our route from PERTH TO DUNDEE AND FORFAR, we will return to Perth, and take the line from Perth to Dundee, twenty-two miles in length, by the valley of the Tay, and including the stations of KINFAUNS, GLENCARSE, ERROL, INCHTURE, LONGFORGAN, and INVERGOWRIE.

Dundee is the chief seat of the linen manufacture in Britain, and was for many years one of the most prosperous towns in the empire.

Its situation is as sheltered as might be supposed compatible with its maritime character. The Firth of Tay here forms a bay, at the distance of twelve miles from the open sea, and the town rises along a gentle slope, towards a picturesque eminence denominated Dundee Law, where justice was probably dispensed at an early period. The town appears to have originated from various religious buildings, erected in the twelfth century. It was of so much consequence during the usurpation of Edward I., as to be the seat of an English garrison. Wallace is said to have been educated at the school of Dundee.

The town has a substantial and handsome appearance, though almost constantly involved in the smoke of its numerous factories. In the centre is the High-street, having the Town Hall on one side, while other streets, old and new, branch off in all directions.

The Cowgate, more remarkable for business than any of the other thoroughfares, and virtually the exchange of the town, has some handsome buildings, most of which are devoted to commerce, and is adorned at its east end with a venerable archway, originally one of the town-gates. At the south-east corner of Castle-street stands the Exchange Coffee-room, a commodious building erected by a body of subscribers at

an expense of £9,000. Opposite the Town Hall, a handsome stre built of late years, has its appearance greatly enhanced by the pub Seminaries, which look down along its area. This edifice is in t Doric style of architecture. The Barracks occupy a commandi eminence at the foot of the Law, and enclose the remains of Dudh Castle, formerly the residence of the Constables of Dundee. N public buildings, creditable to the character of the burgh, adapted the exigencies of its social condition, and consisting of Gaol, Bridew and Police Office, occupy the south-west corner of the town's garde The Lunatic Asylum is a well arranged edifice, about half a mile nor of the town. The Watt Institution is an elegant Grecian structu containing a library, laboratory, lecture-room, museum, &c.

At the entrance of the Middle Quay there is an arch to commemora the landing of Queen Victoria at the port, in September, 1844.

Dundee is rich in charitable, literary, and public institutions.

At the western extremity of the harbour is Craig Pier, used by lar steamers, which ply on the ferry to the Fife coast. From this p to the ship-building yards opposite Frade's-lane on the east, stretch series of docks, which are at once the boast of Dundee, the ch means of its wealth, and the best evidence of its enterprise and taste

Linen of various kinds is at present the most extensive a prosperous manufacture in Dundee, and gives an impulse to all oth departments of trade.

Upon the slope above the town stands *Dudhope Castle*, originally t seat of the ancient family of Scrymgeour, standard-bearers to the kin of Scotland, and whose last representative was created Earl of Dund after the Restoration.

Broughty, or Broughty Ferry, three miles from Dundee, on th shore of the Firth of Tay, is a large sea-bathing village, of moder origin, in which the only conspicuous object is the ruin of an ancien castle, apparently of great strength, probably erected in order (wit the castle at Ferry-port-on-Craig on the opposite Fife shore) to com mand the entrance of this important estuary. *Claypotts*, near Broughty is a ruined tower, said to have been at one time occupied by Mar Ogilvie, a mistress of Cardinal Beaton.

About two miles to the north of Dundee is the old place of *Claver house*—a word calculated to awaken strange associations, as the mem

familiar designation of its former proprietor, John Graham, the conspicuous instrument of a tyrannical government in the persecution of the Nonconformists of the two last Stuart reigns. Three miles to the north-west of Dundee is *Camperdown House* (Earl of Camperdown)—under its former name of Lundie, the birthplace and paternal property of the great naval commander, Viscount Duncan. Near the seat is *Gray*, the property of Lord Gray.

We will now pursue our railway journey from

DUNDEE TO ABERDEEN

BY THE SCOTTISH NORTH-EASTERN LINE.

Sixteen miles and a half from Dundee we reach ARBROATH, having passed the intermediate stations of BROUGHTY FERRY, MONIFIETH, BARRY, CARNOUSTIE, and EAST HAVEN, places which do not call for any particular remark. The neat sea-port town and royal burgh of *Arbroath*, or Aberbrothick, is situated on the shore of the German Ocean.

The principal object in Arbroath calculated to engage the attention of strangers, is the ruin of its celebrated abbey. The *Abbey of Aberbrothick* was founded in 1178 by King William the Lion, for monks of the Tyronensian order, and dedicated to the memory of St. Thomas à Becket. For several ages it was one of the most wealthy and important establishments of the kind in Scotland.

SKETCH NEAR ARBROATH.

At Arbroath

ravine communicating with the sea, but only access
or land end, by groping down a steep path to a dep

The line of railway from ARBROATH TO FORFA
Eastern) is 15 miles in length, including COL
FRIOCKHEIM, GUTHRIE, AULDBAR-ROAD, and CLOC

FORFAR is a town of pleasant appearance, situ
part of a country declining to it on all sides; ado
singular height, and having its environs enlivened
lake. It is a burgh of great antiquity, and was
the time of Malcolm Canmore. About a mile eas
the ruins of the ancient *Priory of Restennet.*
object much visited by tourists, and the once magn
the powerful family of Lindsay, is six miles N.E. of
now consist of little more than a square tower, from
a view is obtained of the whole surrounding country

At *Glammis*, six miles from Forfar, is the celebrat
to the Earl of Strathmore, situated within a park of
a royal residence, Glammis Castle was the scene o
colm II., in 1034.

The view from the leads of the Castle is splendid

At Guthrie Junction Station we pursue the route

fabric, on the edge of a precipitous bank, descending towards the river; 166 feet in length, and 61 broad—the roof supported by twelve pillars.

VIEW NEAR GLAMMIS.

Brechin has given birth to various men of genius and literary distinction: as Maitland, the laborious historian of Edinburgh and London; Dr. Gillies, the historian of Greece; and James Tytler, an eccentric and unfortunate person, well known for his contributions to the first edition of the Encyclopædia Britannica. *Brechin Castle*, the seat of Lord Panmure, is in the immediate neighbourhood of the town, to which it proves, with its rich woods and park, a great ornament. It stood a siege of twenty days from Edward I., in 1303, and only surren

dered on its brave governor, Sir Thomas Maule, being killed by a st
thrown from an engine.

Five miles northward from Brechin, on the bank of the North E
is the parish village of *Stra'cathro*, the churchyard of which is note
Scottish history as the place where (July 10, 1296) John Balliol un
went the humiliating ceremony of being deprived by Edward I. of
kingdom, and of the ensigns of royalty. The banks of the North
are extremely beautiful, especially at *Gannachy Bridge*, a few m
above Stra'cathro. This fabric is, moreover, considered worthy of
notice of strangers, as it stretches by one arch across a profound cha
through which the river rushes with precipitous violence.

SCENE NEAR BRECHIN.

Continuing our railway journey from the Bridge of Dun, we rea
2½ miles distant, DUBTON JUNCTION STATION, where there is a BRAN
LINE OF THREE MILES TO MONTROSE. *Montrose*, a royal burgh
sea-port, and an important town, stands in the peninsula which for
the south end of its cognominal parish. The town stretches north a
south along Montrose basin, and expands a large wing to the sou
east, along the South Esk. The ground around it, excepting th

cks or knolls on the basin, and the low sand-bank along the margin
ıe links, is nearly all a dead level. The town house has an arcade
w, and makes a fine termination to a long spacious area in the
re of the town. The gaol is a neat and substantial structure. The
trose Academy, standing on the links, is a fine structure, sur-
nted by a dome. Near this building stands the school of the seven
porated trades, erected in 1832. Doward's House of Refuge,
ded in 1839, is in the Old English style of architecture. The
ıtic Asylum, situated on the links, is an extensive and commodious
ıe. Until near the end of the last century, communication was
tained across the South Esk with the burgh and great road to
deen only by means of a ferry at Ferryden. A magnificent suspen-
bridge across the river was finished in 1829, at a cost of £20,000.
Harbour of Montrose extends from the bridge down the South
and is very commodious, and is furnished with excellent quays.
e are wet and dry docks and slips. The principal foreign import
x—timber, hemp, and tallow being the other articles. Exports for
ıome-markets consist (with the exception of some pavement, or
ıroath stones") of agricultural produce, fish, and pork. The
ıfactures of the town are very considerable, both in importance
ariety. There are numerous societies, literary and scientific insti-
ns, charities, &c.

om Dubton Junction Station we proceed onward to Aberdeen,
ing our destination 90 miles from Perth, and passing the stations
RAIGO, MARYKIRK, LAURENCEKIRK, FOURDOUN, DRUMLITHIE,
EHAVEN, MUCHALLS, NEWTONHILL, PORTLETHEN, and COVE.

angers from the south are invariably surprised to find, in this
ern region, so large and elegant a city as ABERDEEN. It is built
irregular piece of ground, in the south-east angle of the county,
diately to the north of the efflux of the Dee, which forms its
ur. The city proper is locally called Aberdeen: an inferior
denominated Old Aberdeen, is situated at the distance of rather
than a mile, near the efflux of the Don.

erdeen is a city of great antiquity. Its privileges as a royal burgh
elieved to have been conferred by William the Lion about the
1179. In 1137 the old town became the seat of a bishopric which
previously been established at Mortlach in Banffshire. At the
of Harlaw in 1411, the provost, Sir Robert Davidson, with a

byterian form of church gover
connected with Aberdeen are tho
and author of the excellent m
Elphinstone and Dunbar; Hect
the two successive Bishops Fo
writings; Dr. Arthur Johnston
Vandyke of Scotland; James
telescope; Arbuthnot, the fri
architect; and, finally, a galax
during the last century, comp
Beattie, Gerard, and Campbel
Scotsmen who have been produ
its name is very remarkable,
sence of the University, which
education at a moderate rate.
of industry and commercial e
extraordinary degree, its futu
conferred upon the whole cit
shining granite found in abun
durability. The limits of O
chief edifices it contains are
Cathedral of St. Machar was
building of which the preser

New Aberdeen is seated on a rising ground on the north bank of the Dee, near the mouth of that river. It is a large and handsome city, with spacious streets. Union-street is upwards of a mile in length, and is of great beauty. Broad-street, in which *Marischal College* is situated, is celebrated as having been the residence of Lord Byron, while under his mother's care. The finest of the modern public buildings is the County Rooms. The new markets form an immense hall, 315 feet in length. The *Cross*, erected in 1686, on the site of a more ancient structure, and renovated in 1841, is considered one of the most complete structures of the kind now in existence.

There are several large manufactories for the spinning and weaving of cotton, flax, and wool; also extensive works for the manufacture of machinery. The salmon fisheries on the Dee and the Don rivers are very valuable, and employ many hands; and a large export trade is conducted in corn, eggs, butter, pork, live cattle, and granite stone. The harbour has sixteen feet of water at neap tides. The Bridges across the Dee and the Don are under the management of the magistrates of New Aberdeen. The well-known *Brig o' Balgowrie* consists of a single pointed arch of 72 feet span.

Marischal College, founded in 1593, has been rebuilt on an extensive plan.

We cannot leave Aberdeen without recommending to our readers the hospitable and most comfortable Hotel of Mr. D. Robertson, Posting-master to Her Majesty. The ROYAL HOTEL is one of the largest and best managed establishments in Scotland.

The DEESIDE RAILWAY FROM ABERDEEN TO BANCHORY AND ABOYNE is 32½ miles in length.

From Aberdeen we will now proceed on

THE GREAT NORTH OF SCOTLAND LINE,

ABERDEEN AND INVERNESS JUNCTION.

This Company was incorporated by Act 9 and 10 Vic., cap. 103, for a line from Aberdeen to Inverness, with branches to Banff, Portsoy, Garmouth, and Burghead. Length, 138¼ miles. This and the Aberdeen were to have formed one undertaking, when half of the capital of each had been paid up; but an Act of 1850, 14 Vic., cap. 78, repealed the Amalgamation Act, 11 Vic., cap. 105.

The new lines and extensions authorized by the Act of 1854 we Langmuir deviation, 3 miles, 1 furlong, 75 chains; canal branch, 1 m 6 furlongs, 2·23 chains; total, 5 miles. Estimate, £13,000.

By 18 Vic., cap. 28 (May 25th, 1855), the Company was empow to extend from Huntly to Keith, 12½ miles, at an estimated cos £80,000. Productive, 53½ miles.

The Great North of Scotland subscribes £40,000 to the Ba Macduff, and Turriff; £2,000 to the Inverury and Old Meld £15,000 to the Alford Valley; and £5,000 to the Formartine and Bu

By 21 and 22 Vic., cap. 8 (21st July, 1859), the Acts of the Comp were consolidated, and the tolls and charges revised.

One mile and three quarters from Aberdeen we reach Kittybrew Station, and three quarters of a mile beyond, Woodside Station. A few years ago the village of Woodside was one of the most thrivi places in Scotland. From the train, the traveller may see s Established and Free Churches. Passing on we can perceive t Dancing Cairns and Persley Quarries, which have jointly rendere Aberdeen famed for its granite. The extensive Paper Works of Stoc wood can be next perceived, then Newhills, the church of which is co spicuously placed on the brow of an acclivity; and, seven miles and half from Aberdeen, we arrive at Dyce Station, the largest on th line between Aberdeen and Kintore. Near Kinaldie Station, whic succeeds, we pass *Fintray*, the parish of which contains several an quities, the most remarkable of which are the ruined foundations o *Lindores Abbey*.

Three miles from Kinaldie we reach Kintore Station. Kintor is a fine town, but one of the smallest royal burghs in Scotland. It is very ancient, claiming to have received its original charter fro Kenneth II. in the 9th century. The situation is very pleasant—th Don rolling its clear waters in front, while around rise gentle hill The ground occupied by the station used to be called the Battle Fiel and forms part of the Hangman's Croft. About 300 yards from th spot is the site of the Old Castle Hill of Kintore, a remarkable mou which was swept away in forming the line.

Kintore is the Junction Station for the Alford Valley Railway, 11½ miles in length. The first station on this line is Kemnay near which is Fetternear House, the seat of Colonel Leslie, K.H., an

formerly the summer palace of the Catholic Bishops of Aberdeen. T
mansion is beautifully situated in a finely wooded park, on the left ba
of the Don. *Kemnay House*, the seat of A. G. Burnet, Esq., is
picturesque building. In the neighbourhood also is *Castle Fras*
standing amidst a fine park, interspersed with woodland scenery. T
building is very ancient, and belongs to Colonel Fraser.

Three miles from Kemnay Station, is MONYMUSK STATION. T
village lies about a mile to the north. *Monymusk House*, or Cast
may be seen here, occupying the site of a Culdee monastery. T
structure dates from the Reformation, and has a noble, romant
looking exterior. It is the seat of Sir James Grant, Bart. In t
neighbourhood is the old *Castle of Pitfichie*, *Tillyfour Castle*, and t
famous *Castle of Cluny*, the residence of Captain Gordon. The fro
looks towards the south, the castle occupying a most delightful situati
among broad and velvety parks, interspersed with large trees, a
surrounded by fine woods. Cluny Castle is one of the finest specime
of castellated architecture in the country. Any one view can only g
a partial idea of the extent and magnificence of the buildings.

Three miles and a quarter from Monymusk Station is TILLYFOUR
STATION, and nearly the same distance beyond, WHITEHOUSE STATIO
Here we are in the neighbourhood of Castle Forbes, one of the fin
buildings (comparatively modern) in this part of Scotland.

The Castle stands at the base of Benachie, a short distance fro
and on the north side of, the Don. Its situation, among broad ri
parks, trees, woods, and forests, not to mention the river and neig
bouring hills, is remarkably fine. There are some immense trees
the estate, one of which, an ash, stands at the castle, and its tru
contains about 180 cubic feet of timber. It is worthy of notice th
on the estate around Castle Forbes, there is an extent of some 2,0
acres of wood, mostly larch and Scotch fir, and the whole of the plan
tions range at from forty to one hundred years old. The castle, as
now is, has stood for about forty years, having been built at the sa
time as the bridge of Keig. The famous stone bridge of Keig stan
on the Don a little below the castle. It is of one arch, which measu
101 feet in span. In the woods, on the north side of the castle, ne
the road leading away from the handsome stables, there is a very pret
pond, having an oblong wooded islet in the middle.

Castle Forbes was erected by the late Lord Forbes, who gre
altered and improved the place, changing its name from Putachi
Castle Forbes. What is now Drumminor was the ancient C
Forbes, and seat of the family.

Three miles from Whitehouse Station brings us to ALFORD STAT
Alford is a small, but gradually improving village, owing to the
way. The neighbourhood is remarkably beautiful.

"Bridge of Alford," travellers agree in representing as one of
sweetest spots in this part of the country. Standing by the bri
you can see towards the east the rugged Benachie towering at
distance of seven miles; Castle Forbes, surrounded on all sides b
fine woods; the hills of Cairnwilliam and Tillyfourie; and the pi
resque woods of Haughton and Whitehaugh intervening. To the w
along the Government "South and North Road," are seated the chu
and manse of Alford, and the mansion-house of Breda embowered
trees.

Returning to KINTORE JUNCTION STATION, we will continue
journey to Inverness.

Three miles from Kintore we reach INVERURY JUNCTION STATI

Inverury is a place of considerable antiquity. The town, the
irregular and winding in its shape, is yet not without some pleas
features. Its situation is excellent, and it contains some good buildi
It has several inns. The town has long been one of the best pl
of business in the county. It has numerous cattle markets, wh
are well attended, and branch banks, all of which do a
business.

This burgh was the scene of a rather serious engagement betw
the rebels and the Royalist forces during "the Forty Five." A
Hall, the residence of the Earl of Kintore, is immediately opposite
station, on the north side of the line and of the Ury. It has b
built at various periods, and occupies a very prominent and comma
ing situation. The grounds have recently been very much beautifi

At Inverury there is, westward, a BRANCH LINE TO OLD MELDR
six miles in length, opened July 5, 1856. Inverury is also the junc
station for the TURRIFF AND BANFF BRANCH.

Continuing the main route from Inverury Station, we pass PITCA
OYNE, BUCHANSTONE, INSCH, WARDHOUSE, KENNETHMONT

Gartly Stations, arriving, 41 miles from Aberdeen, at Huntly Station. On approaching this point the traveller will be able to notice the general features of the town, and the view is most pleasant. Among the buildings that will attract notice is a late erection near the west end of the town, and not far from the right bank of the Bogie. It is an institution founded by the late Dr. Scott, a native of Huntly. Besides this building, the traveller will also notice the Parish Church, near the west end of the town—a plain building; the Free Church, further to the east; the Roman Catholic Chapel, noticeable for its large circular tower; the Independent, United Presbyterian, and Episcopal Chapels, &c.

More towards the east, and peeping out from among the woods, he will notice the ivy-crowned Castle of Huntly, the ancient stronghold of the Gordons, the scene of many a gay festival, and many a gallant exploit. As is well known, the castle and district around was originally possessed by the Comyns; but the building, of which the ruins now present so interesting an object, was erected in 1602 by the first Marquis of Huntly. Traces of the original building, as possessed by the Comyns, may still be seen in some vaults and mural remains. A little to the east of the old castle stand the buildings known as the Gordon Schools, and presenting in their elegant appearance, not less than the benevolence of their object, a contrast to the grey ruins of the old feudal keep.

To the north of the Castle, and almost hid among the trees, may be recognised a portion of the Mansion of Huntly Lodge, the residence of the Duchess of Gordon. The present house occupies the site of a much older building.

Such are the more prominent buildings that catch the eye. The traveller, however, will not fail to mark the admirable natural beauties of the scene—the girdle of hills by which the town is enclosed, and among them the Binhill to the north, bounding the view in that direction; and the Bogie meandering in front, enlivening the scene and giving motion to numberless wheels that cluster on its banks. Within little more than a few yards, a dozen mill-wheels are in motion, propelled by the never-failing stream. The most important establishment on the banks of the Bogie is the famous distillery of Piries-mill, situated a short distance below the railway station, and on the same side of the river.

Leaving Huntly Station, we pass ROTHIEMAY and Gra
STATIONS, arriving, 13 miles from Huntly and 54 miles from A
deen, at KEITH STATION, the terminus of the Great Nort
Scotland line, which here unites with the

INVERNESS AND ABERDEEN JUNCTION RAILWA

This Company was incorporated by 19 and 20 Vic., cap. 110 (
July, 1856), to make a railway from the town of Nairn to the to
Keith. Capital, £325,000, in £10 shares; loans, £108,300. A
ments with the Morayshire, with which line this undertaking for
junction. Length, single line, 40 miles. Opened throughout,
August, 1858.

Agreements with Inverness and Nairn as to use of station at Na
with Morayshire, as to station at Elgin; and with Great Nort
Scotland, as to station at Keith.

THE INVERNESS AND NAIRN COMPANY was incorporated by 17
18 Vic., cap. 176 (1854). Length, single line, 15 miles. A branc
harbour of Inverness, 4 furlongs. Opened November 5, 1855. Wo
by the Inverness and Aberdeen Company.

The station at Keith is a building of considerable elegance, an
sufficient dimensions to afford ample accommodation for the exte
business of which it is the centre.

Emerging from the station, and turning to the left, we have a
of Fife-Keith, and the more prominent features of the town of K
The houses immediately in the foreground, with the large plain b
ing most conspicuous among them, which cannot be taken for any
but a granary, are the Mills of Keith—a flour mill of conside
extent belonging to the Messrs. George. Behind these, and almos
by trees, are the ruins of Oliphant Castle, or Tower of Milto
ancient seat of the Ogilvie family. This ruin stands on a cliff,
hanging the romantic Linn of Isla. Still further upwards, conspi
among some trees, is the massive spire, with its four turrets,
Parish Church, one of the handsomest ecclesiastical buildings in
shire. The other spire descried in the distance is that of the C
Chapel, also a very neat erection. On the right will be notic
houses of the village of Newmill, and beside them the ruins
ancient seat of Gordon of Glengerrick, surrounded by the [illegible]

Proceeding onward, the train passes over a viaduct, designated the idge of Auchunary, so named from the farm that stands near to it. ter leaving this point, we pass on the right the farm of Roseary; and -e we leave the parish of Keith, and enter that of Boharen, the arch of which soon meets our gaze in a beautiful glen. A short tance beyond the manse is *Auchlunkart House*, the seat of Andrew wart, Esq., M.P. Passing on, we reach MULBEN STATION, five es from Keith. Just beyond this point of the line it begins to fall ards the Spey, the gradient for a distance of two miles and a half ig so great as 1 in 60. The first cutting we pass through is 20 deep, and of considerable length. As we emerge from it, we on the left the houses of Mulben quite close to the line. This farm ngs to the Earl of Seafield. The train now enters Slackdu rock ing. This cutting reaches a perpendicular depth of 60 feet, and is O feet in length. Seen from the railway, the appearance of this ful excambation of the solid rock is very impressive, but a still e distinct idea of the vast labour encountered is obtained by looking n upon it.

eaving the cutting, the train passes over Mulben burn by an iron n bridge of 31 feet span, and then passes over a long embankment, eet deep and 2,000 feet long. Crossing the burn again by a fine e bridge of excellent masonry and difficult construction, for it is iderably "skewed," the traveller gets a fine glimpse of sylvan ery on both sides of the line. The next bridge, immediately follow- is of a similar nature to the one first crossed, but its construction more difficult; for while on one side a solid rock foundation was d, the other side had to be founded at great depth upon piles.

hese bridges crossed, the train enters another excavation of a still e formidable character than the last. It is named the Tunnel ting, from the fact that it was originally proposed that a tunnel ld be formed here, and this proposal would have been carried out it not been found that the whole of the material cut out would be ired for the immense embankment which immediately follows, and ch is 45 feet deep and 1,300 feet long. The cutting is 100 feet in pendicular depth, and 700 feet long. Its sides, however, slope siderably, and the length along the side to the top from the edge e line is probably about 150 feet. Looking back, it will be seen

that a mountain has literally been hewn out to admit of a pass
the great commercial highway.

The braes along the line, as we approach the Spey, are richly w
with natural birch, with occasionally plantations of other descrip
and the scene, though not so grand as other portions of the Sp
beautiful and refreshing. The traveller will scarcely have ti
admire the different beauties around him, with now and then a ten
little glen opening to his view, when he will have arrived at the f
IRON BRIDGE OVER THE SPEY.

The train now speedily reaches ORTON JUNCTION STATION,
the EXTENSIVE RAILWAY TO CRAIGELLACHIE BRANCHES OFF.

Leaving Orton, the line runs for half a mile through a deep c
30 feet in depth, and we pass the Orton plantations, rich in oaks,
beeches, &c. As the level varies, we obtain rich glimpses of the
of the Spey, and of the high land on the eastern bank. We nex
the village of *Nichberry*, on the property of the Duke of Richa
and *Orbliston*, one of the finest farms belonging to that nobl
Four miles and a quarter from Orton Junction Station we
FOCHABERS STATION.

Advantageously seen from several points in the line, is the pretty
town of Fochabers, nestling at the foot of the adjacent hills; and,
its neat suburban mansions, picturesquely enclosed by extensive
lands. It is only a few hundred yards from the magnificent b
which here crosses the Spey; and is regularly laid out in the form
parallelogram, with square in the centre, and streets crossing it at
angles, in a cruciform manner. On one side of the square is the
blished Church, with a neat portico and spire; there is also a hand
Episcopal Chapel, with turrets; a Roman Catholic one, of elab
workmanship; and also a Free Church, all of which are prom
objects from the line.

At the south-eastern end of the town is Milne's Institution, a
large educational establishment.

Close to the town of Fochabers, on the summit of a gentle ac
is *Castle Gordon*. This stately mansion was founded by Ge
second Earl of Huntly, towards the end of the fifteenth century,
occupies the site which for bygone ages has been known as the B
Gight (Bog na Gaoith, i. e. the Windy Bog). The modern edif

adrangular in form, and consists of four stories, surmounted by ely sculptured cornice and battlements.

Three miles from Fochabers, we reach LHANBRYD STATION. The age was rebuilt a few years ago by the trustees of the late Earl of e. It is beautifully situated in a small gorge, through which runs a eamlet. Close to the station are the Lhanbryd wool mills. On ving Lhanbryd, the train enters on the farm of *Coxton*, and a little ther on the left appears the *Tower of Coxton*, which formerly onged to the Inneses, Barts. The history of this building is ouded in antiquity, but it seems to have been surrounded by very ensive fortifications, of which the tower alone remains, which, ex- ting the modern additions, has been built entirely of stone and lime h iron doors. By the care of the Fife trustees, it is in a wonderful te of preservation.

Passing, soon afterwards, through the cutting on the farm of Black- ds, we have a fine view of Elgin, and arrive, three miles from anbryd, at ELGIN STATION.

Just as the train is going slow before stopping, we notice that we s the station of the Morayshire Railway, connected now with the erdeen and Inverness Junction. The Morayshire line connects gin with Lossiemouth Harbour, and is the first line of railway made the north. Behind stands the Station Hotel, one of the finest dings of its kind in the north. The most prominent building in east end of the city is *Anderson's Institution*, built in the Ionic le—a charity founded and endowed for educational and charitable poses, by a native of Elgin.

Close to Anderson's Institution is the pride and glory of the city— *Cathedral*. Its beautiful doorway, matchless in its elegant pro- tion and delicate tracery; its massive western towers, which yet rear eir heads to the height of eighty feet; its beautiful eastern towers, d the fragments of the great centre tower; the splendid pointed ndow in the west, and the circular light in the east end; the delicate ork in the choir and vestry, and the highly decorated and yet well- reserved chapter-house,—all tell of the glory of the building when "for ze and ornament combined, it was unmatched" in Scotland.

The Cathedral was founded in 1224 by Bishop Andrew Murray, but as destroyed by fire in 1270; and, says Mr. Billings, "It is to a

date closely subsequent on this calamity we may attribute the g
part of the present ruins."

No visitor should pass through Elgin without inspecting the
Among other interesting objects are—the tombs of the Gordon
the first Earl of Huntly, who died in 1470, and the late D
Gordon, being alike buried here; the tombstone of the found
statue of Bishop Innes, the founder of the central tower, &c.

We must leave the Cathedral, interesting as it is. To the we
will be noticed the Roman Catholic Church, a fine specimen
corated Gothic architecture. Behind rises the tower, 95 feet h
the Moss Street United Presbyterian Church. Further north i
the tower of the Established Church. The South Free Church
the decorated Gothic style, having a spire 120 feet high. L
north from the South Free Church, the Duke of Gordon's mon
next catches the eye. It is situated on the summit of Lady
adjoining the ruins of the old castle, of which little is known,
which the Earl of Moray was Constable, while the hill is still po
by the Earl. The Gordon monument consists of a Tuscan c
surmounted by a statue of the late Duke.

In connexion with Lady Hill, we ought not to omit to mentio
a Russian gun of large calibre, the gift of the Admiralty, i
stationed upon it. Looking west a little way in the distance, d
fully situated, and at the extreme end of the city, is seen
Hospital, an elegant structure of the Roman Doric order.

In front of the Hospital a good view of High-street, as far
Established Church, which stands on the centre of the str
obtained. The public buildings on the north side of High-street
The Commercial Bank, a magnificent building in the Italian
Royal Bank, at the west corner of North-street; Trinity Mason
on the opposite corner, with the North of Scotland Bank adj
These buildings are all of a very superior description; the two
which were erected only a year ago, tend much to embellish th
of the city. Further down, we come upon the British Linen Com
Bank, and at the extreme west end of the street, near to the
Cross, is the Museum, a very handsome building, in the Italia
also.

On the south side of High-street the Court House &c.

Behind are the Jail and Police Office. Passing School Wynd, and a little further on, we come to the new premises of the Union Bank—one of the finest buildings in the place. A little way past the church is the entrance to the New Markets. In connexion with the Markets and fronting the street, one flat up, is the Concert Hall or Theatre. On High-street again, past Batchen-street, and opposite to the Royal Hotel, is the Caledonian Bank.

Elgin has been favoured beyond the lot of many towns in regard to public charities. In addition to those we have already enumerated (Anderson's Institution and Gray's Hospital), there are various others, consisting of the Maison Dieu Endowment, Auchray's, Dick's, Darkland's, Gordon's, and Cramond's Mortifications. It has also various educational bequests, such as Leslie's and Brander's, Petrie's, Dick's, Duncan's, M'Andrew's, and Allan's.

Reference to education brings under our view the *Academy*, a seminary which has long held a high place among the educational establishments in Scotland.

Before leaving Elgin the visitor should see the *Priory of Pluscarden*, situated in the delightful valley of that name. It is a fine specimen of the Early English first pointed style. This Priory was founded in 1235, and belongs to the Earl of Fife.

The train, on leaving Elgin Station, passes amidst woodland scenery of great beauty. On the one side are the wooded policies of Palmer's Cross House and Struan Grove, and on the other an oak wood, which extends for several miles north-westward.

The vale of the Lossie is next seen as the train progresses, covered with large fertile farms, and small crofts here and there interspersed. Stretching away to the south-westward is the vale of *Mosstowie*. Nearing Alves the *Duke of York's Tower* presents itself, on an eminence in the oak wood. Six miles from Elgin we reach ALVES STATION. The village, situated at a short distance, is almost hid from view behind an eminence. This district is one of the most beautiful and fertile in Morayshire, the "Garden of Scotland."

At KINLOSS STATION, our next halting-place (three miles and three quarters from Alves Station), the reader should alight to see the ruins of Kinloss Abbey, an edifice founded by David I., in 1150.

Looking down towards the Firth, at the west point of the bay of

Burghead, the reader will see the town of Findhorn, to which
a branch railway from this station. It is about three miles
from Forres, to which town it is the seaport. Most of the pe
engage in fishing. Findhorn is never alluded to in the h
records of Moray, except as a thriving fishing station and po
More than a century ago the sea covered a considerable par
town, especially that part called Old Findhorn.

About two miles to the east of the bay of Kinloss (or Bur
it is sometimes called) is the fishing station of *Hopeman*, a
rising importance.

The train now approaches FORRES. As we advance we see
Trafalgar Tower, a magnificent erection on the top of the heigh
Cluny Hills to the south of the town. The tower is 66 feet hig
in diameter. It was built by the patriotic inhabitants of Forres
memorate the battle of Trafalgar, and its heroic victor, Nelson.
the top of the tower is to be had one of the finest views in the
Scotland. To the eastward is seen the city of Elgin, with the Duke
don's Monument towering in the distance. To the north are s
fishing ports of Burghead and Findhorn, with the coast on the o
side of the Moray Firth, the counties of Caithness, Sutherland, an

SKETCH NEAR FORRES.

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seats of the Earl of Moray, the Findhorn Suspension Bridge, w
rapid river running underneath; Knockomie, the residence o
Smith; and Sanquhar House, the property of Wm. Fraser Tytle

As the engine runs along to the station, by exercising the "

faculty" a little, another object of antiquarian interest may be observed on nearing Forres, viz., "Sueno's Stone," a large obelisk, about 20 feet high, and, it is said, 12 underground, and 4 broad. It is full of curiously carved figures on one side, representing some festival or religious ceremony. Various conjectures have arisen as to its history. The most common is that it was left by the Danes at the battle of Forres, in 1008. Entering the town of Forres by the east, we meet first the cottages that so attracted our eye from the railway. We next come to the Episcopal Chapel, a fine new building. On the opposite side stands Forres House.

The next building worthy of notice is Anderson's Institution, a handsome structure in the Grecian style, adorned with a spire and clock. The institution was endowed by the late Jonathan Anderson, Esq., of Glasgow, for the education of poor children from the parishes of Forres, Rafford, and Kinloss. The St. Lawrence Lodge, now the Mechanics' Institute and Library, is another striking ornament of the town. Beside it stands Tulloch Park, the residence of the Rev. Mr. Miles, Episcopal minister. On the opposite side of the street is Fraser's Hotel, a very comfortable place of refreshment.

A little farther on the High-street we have the National Bank, a good substantial building. Now comes the Town House, situated in the centre of the burgh. This edifice is of pretentious character. Adjoining is the new jail.

A few yards in front of the Town House, in the middle of the street, stands the Cross, an imitation of Sir Walter Scott's monument. Opposite to the Cross is the British Linen Company's Bank, and a few steps further west is the Caledonian Bank. A little to the west is the Parish Church, a large building, erected in 1775. At the foot of Cumming-street is the Free Church, a fine new structure.

Journeying to the west end of the town, we arrive at the Castle Hill, once the seat of royalty, and where King Duffus was murdered by the governor in 966. It was on their way to this castle that Macbeth and Banquo were met by the weird sisters. On the same mound there was erected last year a splendid monument to the memory of Dr. Thomson, of Cromarty, whose lamented death in the Crimea must be in the memory of all our readers.

On leaving Forres Station the train soon reaches Findhorn Viaduct, from whence the tourist will have a fine view of the suspension bridge

across the river, erected in 1832. On approaching Brodie Station (three miles and a half from Forres), we get a glimpse from the train of *Brodie Castle*, nestled amidst the luxuriant trees, by which it is almost veiled from sight. Leaving Brodie Station, the train passes over the moor on which the weird sisters met Macbeth and predicted that he should be king and thane of Cawdor. From this spot the railway runs in a straight direction for about five miles. *Inschoch Castle* is next seen, southward, a few hundred yards from the line. On the opposite side lies *Lochloy*, at one time an important estate. On approaching the farm of *Auchnacloich*, we get a fine view of Nairn.

SKETCH NEAR NAIRN.

Its harbour and shipping are seen to advantage, as also the opposite shore of the Moray Firth, with its varied tints and surf-beaten base—now steep and rugged, now gently sloping, and again level—from opposite Fort George, till the view dissolves in the distance towards Caithness. Soon the traveller is borne across the turnpike, lately the main communication between Forres and Nairn, and next minute is on the Nairn Viaduct, of workmanship and symmetry allowed to be almost unsurpassed in Scotland. It contains four arches, each between 60 and 70 feet in span, and the ravine, the two sides of which it joins, admitting of a well-proportioned height, lends it a natural grace and effect which no straining at display, however skilfully executed, could equal. It is plain, but of the very best material and workmanship, free from ev

mechanical ornament, its natural proportions, nevertheless, ornamental and imposing. Southward lie Firhall House, the property of A. Cameron, Esq., and Househill, the property of Lieutenant-Colonel Murray—on gentle slopes, near the river banks; while in the same direction, but five miles distant, stands the lordly mansion, the romantic and widely-known *Cawdor Castle*. In the opposite direction, and at the traveller's foot, is the Nairn Parish Church, of unpretending exterior.

After leaving Nairn Station, the train passes the stations FORT GEORGE, DALCROSS, and CULLODEN (famous in history for its "red field"), and reaches Inverness, 109 miles from Aberdeen, and THE TERMINUS OF OUR RAILWAY JOURNEY.

The environs of INVERNESS are singularly beautiful; "everything being done," as said by Dr. MacCulloch, "that can be effected by wood and cultivation, the character of which have a richness, a variety, and a freedom, rarely met with; the mountain screen being so near, varied, and rich; and each outlet differing from the others, where all are lovely, and enjoying the characteristics of a rich lowland country, with those of the wildest Alpine scenery, both close at hand, and often intermixed, while the series of maritime landscapes can be seldom equalled." Inverness marks by its name its topographic situation, and has been a place of great local importance from the era of St. Columba downwards.

Inverness, when made a royal burgh by David I., was then described as one of the "*loca capitalia per totum regnum;*" but the chief charter the town holds by was granted by James VI., in 1591. In the thirteenth century the harbour of Inverness was resorted to by the merchant mariners of that era; but, although by nature made the outlet for a large district of country, the habits of the chiefs and their clansmen were at no time such as to foster commercial or manufacturing enterprise. The town was frequently visited by the earlier monarchs of Scotland, the last so favouring the burghers having been Mary Stuart. When visiting the north to subdue the rebellion of the Earl of Huntly, her troops captured the castle, and she caused the governor to be hung. The house Queen Mary then lived in is still preserved, and may be pointed out to the tourist in proof of how little the royalty of these days enjoyed of the comforts of life, now common to so many in our days. Cromwell, when Protector, caused a fort and

citadel to be raised on the north side of the town, near the river mouth, and with quarters for a thousand men, when burghal records prove that a Scots' pint (*i. e.* a half-gallon English) of claret could be had for a shilling. The masonry of the fort of Cromwell was in large part borrowed from the churches and priories in the Moray Firth, and this so sacrilegiously raised, may have been in part the reason why it was demolished when Charles II. became king of England; but although the scruples of the gentry may have caused the destruction of the fort, the consciences of the burgesses appeared not to have debarred their using up the materials placed so conveniently within their reach, as certain stones in the town buildings of that date would seem to prove.

Episcopal tenets have for centuries been in favour at Inverness, and Jacobite opinions usually prevailed among the magnates of the town and its district; hence the Stuart partisans were numerous in 1715 and 1745.

Inverness is much visited by the tourist, and enjoys numerous and superior means of conveyance, and in the summer season an excellent coach runs on the Highland route by Blair-Athol for Dunkeld. Steamers run regularly and frequently on the Caledonian Canal, and in the summer season to London, and throughout the year to Aberdeen and Edinburgh. The hotel accommodation is extensive and superior—indeed, of all sorts and all classes; although, if it may be written, these Northerns rather do prefer the "genteel customers," and in fine localities are those having an equipage more bowed down unto than in Inverness. Society is good; education, in public academy or private school, excellent; and the English spoken, as to accent and idiom, the modest Invernessians affirm to be more pure than in any other section of her Majesty's dominions. Private lodgings abound, are moderate in rate, unless in the height of the travelling season; the markets are well supplied; and this ancient burgh has always been the favoured abode of the dowagers of the northern counties.

Craig-Phadric, *i. e.* "Peter's Rock," as seen from the Crown Hill of Inverness, is an object so conspicuous as to deserve notice here. It rises 1,150 feet above the river Ness, which flows, at a short distance past its base; it is one mile west of the town; steep, rugged, yet of easy access, and commands from its summit a view, extensive, rich, and varied. The vitrified fort on this hill is perhaps the most complete in

Britain, being in form of a parallelogram, about eighty yards in length, and in breadth thirty within the walls. The stones of this pre-historic fort are strongly bound together by a lava-like concrete; within the ramparts there is a hollow, from which flows a spring of water, and beyond the wall are traces of an outer line of defence.

Culloden, or Drummossie Moor, as it is called by the Highlanders, is one of the most famed historic sites near Inverness. The spot where the carnage was worst is marked by a rude obelisk.

Inverness-shire abounds in ruins of feudal dwellings. The tourist to Ben Nevis will remember the subject of our present illustration.

INVERLOCHY CASTLE.

Inverlochy Castle is a huge quadrangular edifice, forming a sort of court-yard, which is now employed in keeping the cattle of a neighbouring farmer. This is said to have once been the site of a great maritime city, and the early historians fable that King Achaius here signed a treaty with Charlemagne. It is more probable that the fortress was built in the reign of Edward I., either as a station for the troops of that monarch, or by his ally Cumming, Lord of Badenoch. One of the towers is still called Cumming's Tower.

Here, good reader, we close our random notes, and leave, regretfully, scenes that, once beheld, can never be forgotten. Although our companionship thus far has been brief, and our descriptions have been necessarily scanty, yet we have together seen enough to make us love OLD SCOTLAND and her romantic associations,—

"Her airy mountains, from the waving main
Invested with a keen diffusive sky,
Breathing the soul acute; her forests huge,
Incult, robust, and tall, by nature's hand
Planted of old; her azure lakes between,
Pour'd out extensive, and of wat'ry wealth
Full; winding deep and green, her fertile vales;
With many a cool, translucent, brimming flood,
Wash'd lovely, from the Tweed."

THE CHIEF HOTELS,

RECOMMENDED FROM PERSONAL KNOWLEDGE BY THE AUTH

The Traveller may rely upon this list.

Town.	Hotel.	Proprietor.
Aberdeen	*Royal*	Robertson.
Bath	*Christopher's* ..	Amery.
Bangor	*George*	Roberts.
Brighton	*Bedford*	Ellis.
	(This Establishment is specially recommended.)	
Bedford	*The Swan*	Wicks.
Birmingham ..	*Queen's*	Scott.
Bristol	*White Lion*	Hilliar.
Cambridge	*The Bull*	Moyes.
Carlisle	*County*	Breach.
Canterbury	*Rose*	Breton.
Chester	*The Queen's*	
Chippenham ..	*Angel*	Lawes.
Derby	*Station*	
Dover	*Ship*	Birmingham.
Dudley	*Dudley Arms* ..	
Edinburgh	Waterloo	Ramqling.

Town.	Hotel.	Proprietor.
Folkestone	*Pavilion*	Doridant.
Frome	*George*	Brunsdon.
Glasgow	*Queen's*	McGregor.
Gloucester	*King's Head* ..	Churchill.
Grantham	*Angel*	Boyall.
Halifax	*White Swan* .. .	Daxon.
Hastings	*Albion*	Emary.
Huddersfield ..	*George*	Wigney.
Hull	*Station*	Holliday.
Lancaster	*King's Arms*	Sly.
Leamington ..	*Regent*	Bishop.
Leicester	*The Bell*	Boyer.
Leeds	*Scarboro'*	Fleischman.
Lincoln	*Great Northern* ..	Pratt and Son.
Liverpool	*Adelphi*	Radley.
Maidstone	*Mitre*	Spencer.
Margate	*Royal*	Gardiner.
Manchester	*Queen's*	Johnson.
Newcastle	*Station*	
Northampton ..	*George*	Higgins.
Oxford	*The Mitre*	Venables.
Peterborough ..	*Great Northern* ..	Wilkins.
Preston	*Victoria*	Croft.
Reading	*Great Western* ..	
Salisbury	*White Hart*	Jones.
Stockport	*George*	Willoughby.
Shrewsbury	*The Raven*	Lewis.
Wakefield	*Stratford Arms* ..	Rhodes.
Weymouth	*Victoria*	Dunn and Co.
Windermere ..	*Windermere*	Rigg.
Windsor	*White Hart*	Johnson.
Wolverhampton ..	*Swan*	Burrell.
York	*Station*	Holliday.

FARES FOR HACKNEY CARRIAGES

Within a circle of Four Miles' radius from Charing Cross, measured by authority of the Commissioners of Police.

TO OR FROM THE NORTH WESTERN RAILWAY.

THEATRES.

	s.	d.
Italian Opera, Haymarket	1	0
Theatre Royal, Haymarket	1	0
Italian Opera, Covent-garden	1	0
Theatre Royal, Drury-lane	1	0
Princess's, Oxford-street	1	0
Sadler's Wells, Islington	1	0
Olympic, Wych-street	1	0
Astley's, Westminster-road	1	6
Adelphi, Strand	1	0
Lyceum, Wellington-street	1	0
Strand	1	6
Surrey, Blackfriars-road	1	6
City of London	2	0
Standard, Shoreditch		

EXHIBITIONS, &c.

Colosseum, Regent's-park	0	6
Cyclorama, Albany-street	0	6
Egypt. Hall, Piccadilly	1	0
Gallery of Illus. Reg.-st	1	0
Mad. Tussaud's, Baker-st	1	0
Polytechnic Ins. Regt.-st	1	0
Zoological Gardens, Reg.-Prk	1	0
Surrey Gardens	2	0
British Museum	1	0

RAILWAYS.

Eastern Counties—

Station—Shord., High-st.	2	0
,, Mile-end, Cm.-rd	2	6

Great Northern—

Station—King's Cross	0	6

Great Western—

Station—Paddington	1	6

London and Blackwall—

Station—Fenchurch-st. City	2	0
,, Shadw. Chrch.-rd.	2	6

London, Brighton, & S. Coast—

Station—London Bridge	2	0

London & N. Western—

Station—Euston-square.		

London & South Western—

Station—Waterloo-road	1	6
,, Nine Elms	2	0
,, Vauxhall	2	0

North London—

Station—Broadw. Cm. Tn.	1	0
,, Caledonian-road	1	0
,, Islng. and Highbury	1	6
,, Kingsland	2	0

South Eastern—

Station—London Bridge	2	0
,, Bricklayers' Arms	2	0

Aldersgate-st., Barbican	1	6
Alpha-rd, Alpha-pl. St. John's Wd.	1	0
Baker-st., Portm.-sq. King-st.	1	0
Baker-street (Up.) New-rd.	1	0
Bank of England	1	6
Bankruptcy Ct. Basinghall-st.	1	6
Battersea Bridge, Beaufort-st.	2	6
Battersea, the Old Church	3	0
Bedford-square	1	0
Belgrave-square	1	0
Berkeley-square	1	0
Bethnal-green, The Church	2	0
Bishopsgate-st., Houndsditch	2	0
Blackfriars Bridge, Chatham-pl.	1	6
Blackfriars-road, Charlotte-street	1	6
Bloomsbury-square	1	0
Bond-street, Oxford street	1	0
Bond-street, Piccadilly	1	0
Bricklayers' Arms, Old Kent-road	2	0
British Museum	1	0

	s.	d.
Brixton, The Church	3	0
Brixton Rise, The Telegraph	3	6
Broad-st, High-st. St. Giles	1	0
Brompton-square	2	0
Bryanston-square	1	0
Buckingh. Gate, St. James's Park	1	6
Cadogan-place, Pont-street	2	0
Camberwell Gate	2	0
Camberwell Green	2	6
Cambridge-sq. Hyde Park	1	6
Camden Twn. Mother R. Cap.	0	6
Cavendish-square	1	0
Chancery-lane, Holborn	1	0
Charing Cross, The Statue	1	0
Chelsea Hospital	2	0
Chester-sq. Pimlico	2	0
Christ's Hospital, Newgate-st.	1	6
Clapham Common, The Plough	3	0
Clarend.-sq. Somers Town	0	6
Clerkenwell Green	1	0
Coal Exchange	2	0
Commercial Docks, Plough Bridge	3	0
Commercial Rd. E. Margt. St.	3	0
Corn Exchange	2	0
Cov. Garden, G. Russell-st	1	0
Cumberland-ter. Reg. Park	1	0
Custom House	2	0
Dorset-sq. New-road	1	0
Downing-street	1	6
Dulwich, Halfmoon L. Red Post L.	3	6
Eaton-sq. Pimlico	2	0
Eccleston-sq., Pimlico	2	0
Elephant and Castle, Newington	2	0
Euston-sq. New-road	0	6
Eyre Arms, St. John's Wood	1	6
Finsbury-sq.	1	6
Fitzroy-sq., New-road	0	6
Fleet-street, Fetter-lane	1	0
Fulham-road, Stamford B.	2	6
Gloucester square	1	6
Golden-sq., Regent-st	1	0
Gray's Inn Gate, Holborn	1	0
Greenwich, Road to, Kender-strt.	3	0
Grosvenor-place, Chapel-st.	1	6
Grosvenor-square	1	0
Grosvenor-st. (Up.) Park-st.	1	6
Guildhall, City	1	6
Hackney, Wells-st. Mare-st	2	6
Hammersmith Gate	2	6
Hammersmith, Cornwall-rd.	3	0
Hampstead, High-st. Heath-st	1	6
Hanover-square	1	0
Hanover-terrace, Reg.-park	1	0
Harley-street, Weymouth-st	1	0
Hereford-sq., O. Brompton	2	6
Highgate-hill, Archway Tav.	1	6
Holborn-hill, Hatton-garden	1	0
Hyde-park Corner, Lamp post	1	6
Hyde Park Gardens	1	6
Hyde Park-square	1	6
Islington, The Angel	1	0
Kennington Gate	2	0
Kensington, The Church	2	0
Kensington Crescent	2	6
Kilburn Gate	2	0
King's Cross	0	6
King's-rd., Man-in-Moon	2	6
Knightsbridge, Sloane-street	1	6
Lambeth Marsh, Bridge-road	1	6
Leadenhall-street, E. I. House	1	6
Leicester-square	1	0
Lincoln's Inn, Serle-street	1	0
Lombard-st. Birchin-lane	1	6
London Bridge, Adelaide-pl.	2	0
London Docks	3	0
Long Acre, St. Martin's-lane	1	0

Lord's Cricket Ground		
Lowndes-square		
Ludgate Hill, Farringdon-st		
Maida Hill, Aberdeen-place		
Manchester-square		
Mansion House, City		
Mile End Gate		
Mile End Road, Jews' Cemetery		
Mint, Tower Hill		
Montague-square		
New-road, Lisson Grove		
New-road, Portland-road		
New-road, Tottenh. Ct.-road		
Notting Hill-square		
Obelisk, St. George's Fields		
Old Bailey, Central Crim. Ct.		
Old Broad-st., Winchester-st.		
Onslow-sq. Brompton		
Oxford-street, Edgeware-rd.		
Oxford-street, Regent Circus		
Oxford-st. Tottenh. Ct.-rd.		
Oxford-st. Hyde Park L.R.		
Pall Mall, George-street		
Park-lane, Mount-street		
Park-sq. Reg. Park		
Parson's Green		
Peckham, Vestry Hall		
Peckham Rye-road, East Dulwich		
Piccadilly, Half Moon st.		
Piccadilly, Haymarket		
Portland-place, Duchess-st.		
Portman-square		
Post-office, St. Martin-le-Grand		
Queen-sq. Bloomsbury		
Queen-sq. Westminster		
Red Lion-square		
Regent-sq., Gray's Inn-rd.		
Regent-street, Langham pl.		
Regent street, Piccadilly		
Russell-square		
Rutland Gate, Hyde-park		
St. George's-sq., Thames Ba.		
St. James's-sq.		
St. James's-st. King-st.		
St. Katherine's Docks		
St. Pancras Watch. King's-rd.		
St. Paul's Church, Paul's Chain		
Sloane-square, Sloane-street		
Sloane-street, Pont-street		
Smithfield, West, Long-lane		
Soho-square		
South w. Bridge, Queen-st. Pl.		
Spitalfields, The Church		
Stop. Grn. King John's Pl.		
Stoke Newington, Wellington-rd		
Strand, Wellington-street		
Tavistock-sq., St. Pancras		
Temple Bar		
Thurloe-square, Brompton		
Torrington-sq., Bloomsbury		
Tottenh. Ct.-rd., Francis-st.		
Tower of London		
Trafalgar-sq., Strand		
Uxbridge-rd., Goldhawk-rd.		
Vauxhall Bridge, Bridge-rd.		
Vauxhall Gardens		
Walham Green, The Church		
Warwick-sq., Pimlico		
Waterloo Bridge, Lan. st.		
Westbourne-ter., James's-st.		
Westminster, Houses of Par.		
Whitehall, Horse Guards		
Wimpole-st., Ot. Marylbk.-st.		
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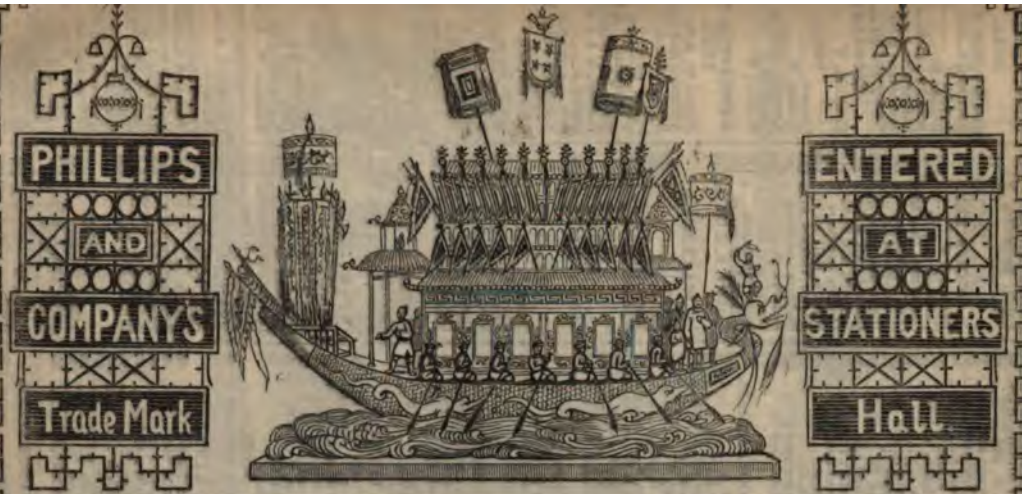

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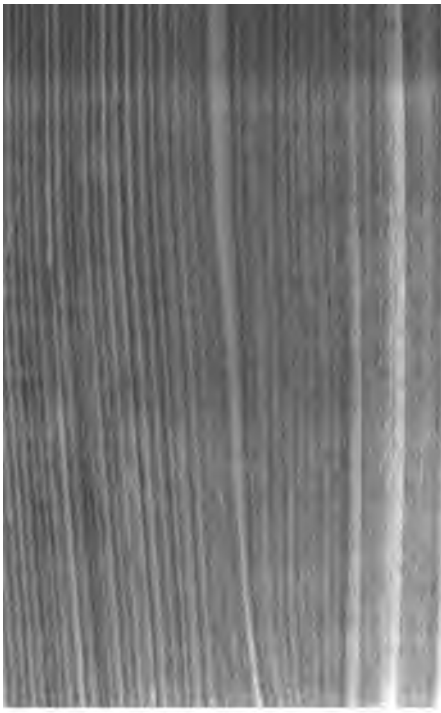

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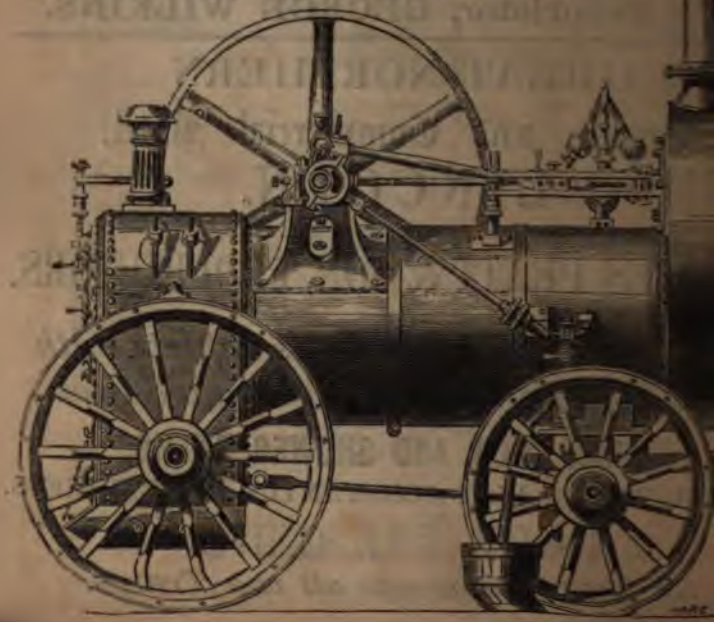

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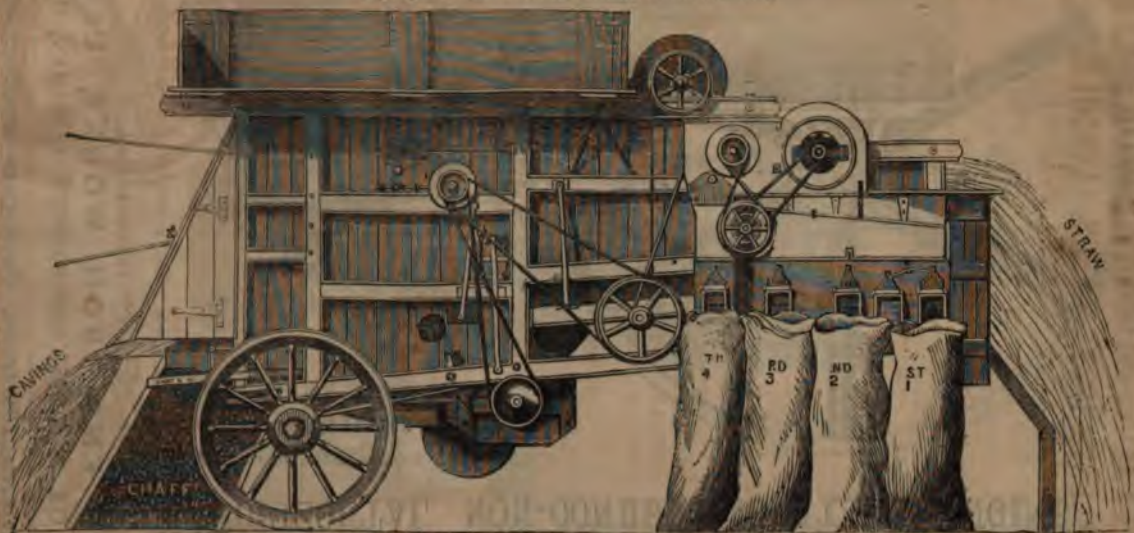

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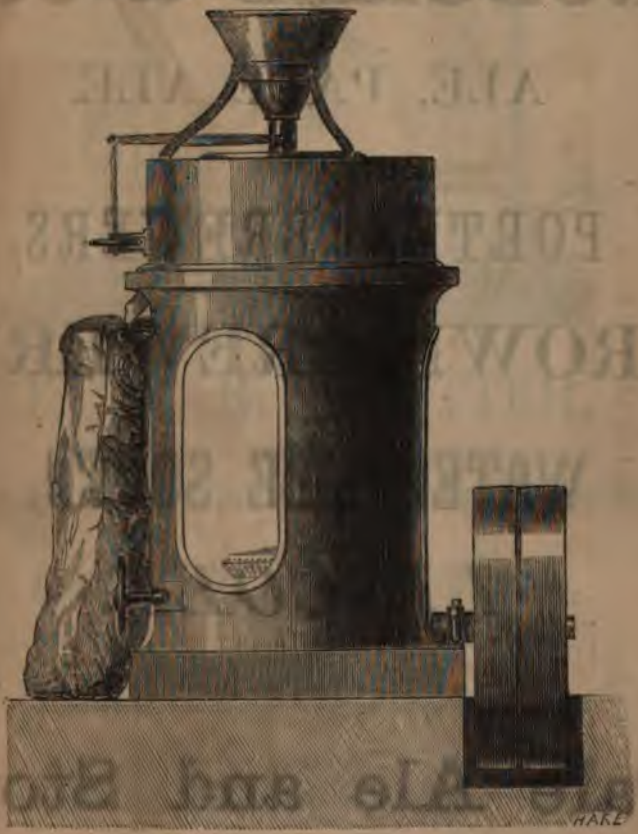

be seen in most parts of the World in regular use.

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Made of Wood from 7 to 12 years old, by

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FIRST PRIZE OF ALL ENGLAND.

Portable Steam Thrashing and Ploughing Engines.

TUXFORD & SONS,

BOSTON, LINCOLNSHIRE,

SUBMIT the following from the List of PRIZES and HONOURS conferred upon them during the past year, and would merely remark that, amongst their earlier Honours, they have now retained the First Prize of the Royal Agricultural Society of England for SIX YEARS successively, and against all competitors.

JULY.—The Royal Agricultural Society of England awarded to Tuxford and Sons' Portable Steam-Engine their First Prize.

AUGUST.—The Yorkshire Society awarded to the same makers their Great Prize.

SEPTEMBER, 1858.—The Port Phillip Farmers' Society (Australia) awarded their First Prize to Tuxford and Sons' Engine. At this meeting Engines from Boston, Lincoln, Grantham, Leiston, &c., were in competition.

APRIL, 1858.—The Imperial Government of Russia selected one of Tuxford and Sons' Engines as a Model Engine.

MAY, 1858.—One of Tuxford's Engines was selected for the Model Farm of His Majesty the Emperor of France.

Since Midsummer, 1860, Tuxford and Sons' Engines and Machines have received FIVE FIRST PRIZES, viz.:—At Gottenburg, July, 1860; TWO FIRST PRIZES from the Royal Agricultural Society of Sweden, one being for the Best Portable Steam-Engine, the other for the best Thrashing and Finishing Machine.

At Geelong (Australia), August, 1860, the FIRST PRIZE for the best Portable Steam-Engine and the best combined Finishing Machine.

At Melbourne (Australia), September, 1860, TWO FIRST PRIZES, one being for the Best Portable Steam-Engine, the other for the Best Thrashing and Finishing Machine.

At the Melbourne Show, as on previous years, English-made Engines from Boston, Lincoln, Grantham, Leiston, Ipswich, &c., were in competition.

Improved Fixed Steam-Engines with Upright Cylinders.

Improved Portable Saw Tables and Sawing Machinery.

Superior Portable Grinding Mills,

Fitted with French Stones, or Derbyshire Grey Stones, and adapted both for Farmsteads and Flour Mills.

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Always in Stock.

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Taken in Exch

DELIVERED BY SPRING VAN, WITHIN TWELVE M
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THE ANGEL HOTEL

Family, Commercial, & Posting House,

GRANTHAM.

RICHARD JOHN BOYALL

Thanks the Nobility and the Public generally, who have so liberally patronised this Hotel under his management; and he, with the greatest respect, informs them that he is determined to maintain the character of the same, by strictly attending to the comforts of his Guests, by supplying

WINES, &c.

OF THE PUREST AND BEST QUALITY,

and by the observance (through his attendants) of those little minutiæ which so essentially contribute to make the abode in an Hotel partake of the comforts of a Home.

The House is fitted up with all modern appliances.

WARM OR COLD BATHS

can be had at any moment; and every accessory convenience has been studied in the

POSTING AND CARRIAGE DEPARTMENT,

so as to forward the Tourist on his pleasure, or the Commercial World on their business. Tourists would do well to visit and make a Central Depôt at this Hotel. The

FAR-FAMED BELVOIR CASTLE

is within a Beautiful Drive of eight miles, whilst

HARLAXTON MANOR HOUSE,

A Splendid Baronial Residence, Syston Park, Belton, etc., are within half the distance above named.

N.B.—Omnibuses by special appointment to the Great Northern Railway.

REFRESHMENT ROOMS AT THE STATION.

PRIVATE STABLING FOR HUNTERS.

LITHIA WATER;

Lithia Potash Water;

LITHIA SODA WATER

PREPARED BY

THOMAS EKIN,

Market Place, Grantham.

These Waters are strongly recommended by the most eminent Medical Men, for use of Gouty and Rheumatic sufferers, as an ordinary drink, instead of Soda or other Aërated Waters. They are strongly effervescent, and most agreeable in flavour.

The following remarks on the use of Lithia are taken from Dr. Garrod's well-known book on Gout and Rheumatic Gout:—

"Within the last two years I have made many trials of the Salts of Lithia as an internal remedy, both in cases of Uric Acid Diathesis connected with Gravel, and likewise in numerous cases of Chronic Gout, and I am much satisfied with the results.

"The Salts of Lithia should be given freely diluted, dissolved in Aërated Water preferable, so as to form Lithia Water.

"When a large amount of Alkali is desirable, I have usually prescribed the Lithia with some Salt of Potash or Ammonia, and the combination may advantageously be administered in the Aërated state."

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Two or three Bottles should be taken daily. The best time for drinking it is the first thing in the morning, taking a little exercise before breakfast, with luncheon, and after dinner.

Observe each bottle has the name of the Maker, THOMAS EKIN, Chymist, Market Place, Grantham.

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SODA, POTASSA, SELTZER, & VICHY WATERS,

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Effervescing Lemonade, by Steam Power.

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Respectfully announces that he has made an extensive enlargement of h premises, and has been enabled in consequence to make very considerable add stock of Goods, especially in the ornamental and miscellaneous departments; a desirous of making purchases for presents or otherwise, he begs to say that a will be found amongst his present stock, such as ILLUSTRATED BOOKS, and GENTLEMEN'S DRESSING CASES, WRITING DESKS, INK BLOTTING CASES, BOOK SLIDES, DISSECTED PUZZLES, BACK BOARDS, BAGS, &c.

Also a well assorted stock of

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The Patent Portable Steam-Engines Ma
many years been acknowledged superior to all others
extensive resources devoted to their construction and im
ABOVE all competitors. They have carried off 21 First
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Royal Agricultural Society of England, and the Univ
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Engine, without extra expansion valve, or any other com
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WORKING WITH 3½ lbs. OF COAL PER HORSE-POWER.
Any number of References can be given to Farmers, Railway
and others, who have had these Engines at Work for years, al
proved themselves the Best, the most Durable, and the most E
first class of WORKMANSHIP AND MATERIAL can construct.'

Patent Combined Machines, for Thrashing
Market, at one operation; to which the First Prize of
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The performance of R. H. & Sons' Prize Machine at
noticed as follows in the report in "The Times" of July 26t
have succeeded in turning out a machine which on trial
leaving no grain in the ear, and none being wasted, as i
chaff, which was well separated, the straw, which sustai
operation, or the pulse. The machine seemed to do its
The straw underwent a strict examination at many han
and several practical farmers expressed themselves in ter
the result, having narrowly watched the process through

Improved Fixed Steam-Engines, to which
the same Meeting.

New Patent Ploughs, to which the Two Firs
Trial of the Royal Agricultural Society at Warwick, as
heavy land, and which have since taken a large number
tition with ploughs, by all the leading Makers.

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(ONE MAY BE SEEN IN DAILY OPERATION ON THE PREMISES,)

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Marble Chimney Pieces,

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New Music at Half-Price, sent per Post, on receiving Stamps in advance.

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The subjoined figures, which have been authenticated by a Public Accountant, show the steady increase, from year to year, in the circulation of the "EXAMINER AND TIMES":—

	Number published.	Daily average.
1856	5,662,983	18,150
1857	6,940,122	22,244
1858	8,142,141	26,096
1859	10,056,903	32,130
1860	**11,294,883**	**36,210**

The Proprietors of the "Manchester Examiner and Times" beg leave to call the attention of Public Companies, Solicitors, Estate Agents, Auctioneers, &c., to that Journal as a medium for bringing their Advertisements under the notice of the Mercantile community throughout the Manufacturing Districts.

The Circulation of the "Manchester Examiner and Times" far exceeds that of any other Journal published in the provinces; and as no Newspaper is so extensively read by the influential commercial and manufacturing classes throughout the populous districts of Lancashire, Yorkshire, Cheshire, Derbyshire, Staffordshire, &c., it will be found incomparably superior to any other as an advertising medium for the counties north of the Trent.

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„ „ Old East India	54/-
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BUCELLAS, choice	32/-
MADEIRA, East India, old and very rare	80/-
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SAUTERNE	36/- & 45/-
VIN DE GRAVE	30/-
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„ 2nd quality	54/-
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„ Madame V. Clicquôt's (genuine)	80/-
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„ in pints	24/- to 42/-
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MOSELLE, sparkling	70/-
HOCK	27/- 36/- 42/- & 54/-
„ in gills	12/6
„ in pints	20/-
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CLARET, St. Julien	
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„ La Rose	30/-
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WHISKY, Best Islay, Glenlivet and Campbelton
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„ Good Grain
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„ Old Hollands
„ „ in cases per d
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„ Old, in cases per d

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	Per Qts.	P
Best London D. B. Stout	6/-	3
Guinness and Co.'s Extra Stout	4/6	2
Bass and Co.'s Pale Ale	6/-	3
Edinburgh Strong Ale	6/-	3
Fine Mild Ale	4/6	2
Allsa Table Beer	3/3	2
		K
Bass and Co.'s East India Pale Al		
Mild Ale	24/-	
Best Dublin Extra Stout		
„ London D.B. „		

Bottles required in exchange or to be paid for. The amount will be allowed when they are returned.

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Bateman and Moore's Patent Hydrant.

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LOOSE VALVE COCKS;

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Emigrants' Stoves, for warming and cooking.

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Kitcheners, with one, two, three, or more roasters and ovens, boilers for hot supply and steaming, of every make, size, and value—a very great variety.

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Hat Stands and Umbrella Stands, a large choice; also Hat and Coat Rails.

Tables: Console, Garden, Hall, tripod and pillar work and occasional tables, Aquarium Stands, Wash-stands, Dressing-tables, with metal or marble tops, ornamental brackets for slabs.

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Scrapers, numerous patterns, with pans, for walls and for stone.

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Balconets.
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Ditto Gutters, of every size and form.
Stable Fittings—
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Imports every sort of Marble Chimney-Pieces, and keeps a large stock in Sicilian, Italian Vein, Rouge Royal, St. Anne's, Florence, Coquillé Sarrancolin, Statuary (best and second), Vert des Alpes, Rouge Jaspé, Jaune Lamartine, Jaune Oriental, Napoleon Rosé, Rubané, Pavonazzi, Black and Gold Bardilla, Dorn, Walmt, Egyptian Green, and all the most favourite Continental marbles; and is furnished with the newest designs from the foreign manufactories.

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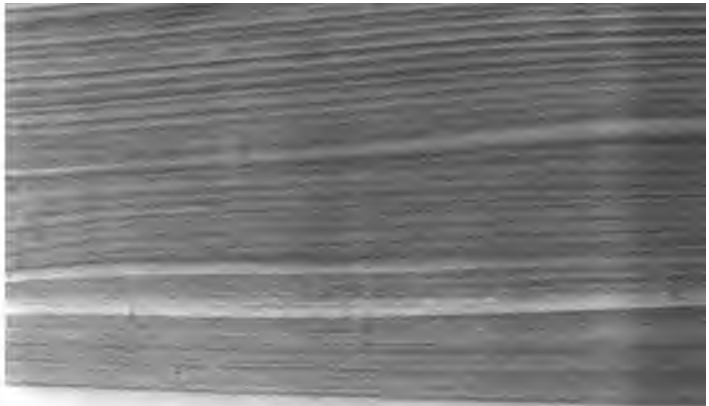

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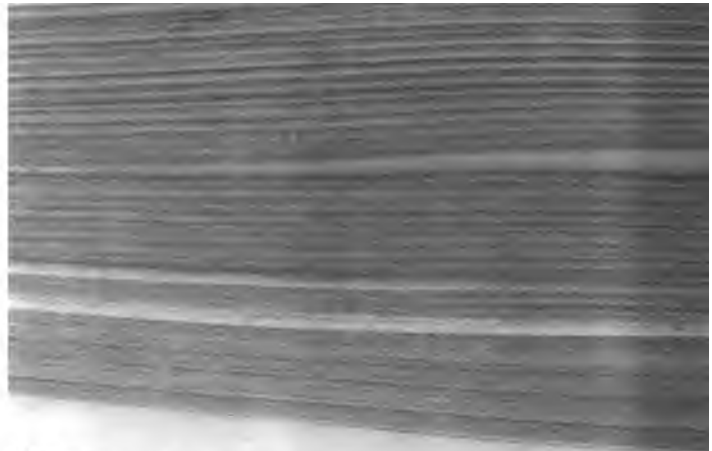

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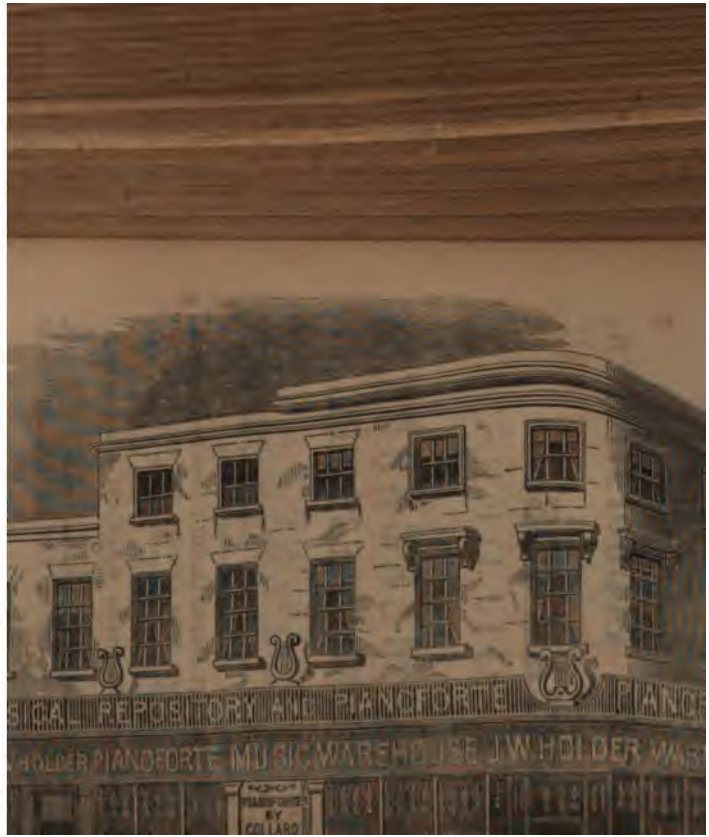
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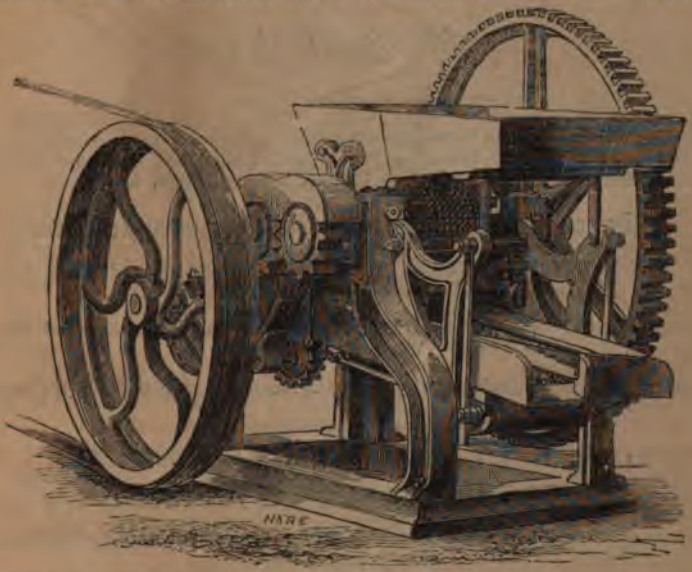

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LIFE ASSOCIATION OF SCOTLAND (continued).

THE 21st ANNUAL MEETING

Was held at the Head Office on the 17th July, 1860, when the Directors reported a high satisfactory state of the affairs.

DURING THE LAST YEAR, THE APPLICATIONS for NEW LIFE ASSURANCES were	1429, for	£641,936 0
Of which the Directors accepted	1177, for	£531,820 0
ANNUITIES were also purchased on 14 Lives at the price of	...	£7,142 0
THE ANNUAL INCOME from Premiums of Assurance and Interest on Investments, is	...	£163,177 0
THE ACCUMULATED FUND amounts to	...	£495,801 0
THE DEATHS amongst the Assured still continue under the calculated amount. There were during the year 106 deaths, covered by 142 Policies for	...	£56,632 0

THE TOTAL ASSURANCE TRANSACTIONS since the commencement of the Business amount to **£5,888,464 Sterling.**

THE PROGRESSIVE INCREASE of the Business is shown in the following Table :—

Assurances since December, 1838, to these Dates.			Annual Income.
5th April, 1842,	238 for	£131,824	£4,524
1845,	610 ,,	327,249	10,492
1848,	1,195 ,,	617,945	19,656
1851,	3,578 ,,	1,571,981	45,970
1854,	7,015 ,,	2,770,686	80,673
1857,	10,203 ,,	4,319,760	124,318
1860,	**13,397** ,,	**5,888,464**	**163,177**

The NEW ASSURANCES for the last eight years have been on an average 1071, for £504,0 per annum.

The POLICY-HOLDERS are wholly exempt from the liabilities of Partnership, and the sum assured are guaranteed.

HEAD OFFICES:—

Edinburgh ... 82, PRINCES STREET.
London ..... 20, KING WILLIAM STREET, CITY, E.C.
Dublin ..... 60, UPPER SACKVILLE STREET.
Glasgow ..... 2, VICTORIA PLACE, WEST REGENT STREET.

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The Rev. Prof. Kelland, University.
John Brown, Esq., M.D., F.R.C.P.
Wm. Muir, Esq., Merchant, Leith.
Jas. M. Melville, Esq., of Hanley.
Walter Marshall, Esq., Goldsmith.
George Robertson, Esq., W.S.
Warren H. Sands, Esq., W.S.
Alex. K. Mackenzie, Esq., Banker.
Lieut-Col. R. W. Fraser, H.E.I.C.S.
Wm. Young Herries, Esq., of Spottes.

Medical Officer—P. S. K. Newbigging, Esq., M.D., F.R.S.E.
Manager—JOHN FRASER.

DIRECTORS AT LONDON.

John Fairrie, Esq. (Fairrie, Bros. & Co.), Church Lane, Commercial Road.
John Boustead, Esq., 8, Upper Gloucester Street, Dorset Square.
William Walter Cargill, Esq., Oriental Bank.
James L. Wylie, Esq. (Dumas & Wylie), Change Alley, Cornhill.
Thomas Graham, Esq. (Graham & Lyde), Mitre Court Chambers, Temple.
John Maitland, Esq. (Maitland & Graham), 19, College St., Westminster.
Medical Officer—Stephen H. Ward, Esq., M.D., 28, Finsbury Circus.
Solicitors—Messrs. Simpson, Roberts, & Simpson, 62, Moorgate Street.
Res.-Secretary—THOS. FRASER.

DIRECTORS AT DUBLIN.

John Jameson, Esq., Distiller, Bow Street.
Matthew Anderson, Esq., Solicitor, 2, Inn's Quay.
David Drummond, Esq., Merchant, 58, Dawson Street.
Robert Gray, Esq., Banker, 3, College Green.
Francis Cood, Esq., 7, Fleet Street.
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UPHOLSTERERS TO HER MAJESTY,

Respectfully request those about to Furnish to visit their **Cabinet** and **Upholstery Saloons**, which present for selection the largest and most varied Assortment of **First-Class Furnishings.**

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The **Bedding** is made up under their own inspection, of the most carefully selected Material.

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IMPROVED KITCHEN RANGES, WITH SELF-ACTING OVENS AND BOI

Nickel Silver, and Electro-Plated Spoons, Fo
Cake-baskets, Tea Sets, Toast Racks and Wai
Cruet Frames, Liquor Frames, and Bottle Slid

TABLE CUTLERY.

QUEEN'S METAL TEA & COFFEE POT

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Portfolios, Inkstands, Dressing Cases, etc.

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Stereoscopes and Slides in endless variety.

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The most Portable Achromatic Telescope made, only 4 inches when Closed, very Powerful, and good for a Range of Twenty Miles. Post free, 22s.

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IN ORDINARY TO HER MAJESTY.

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Where, along with Cut Glass Ware, there is always a choice selection of Glass Lustres, China and Earthenware Goods, Parian, Alabaster, and Dresden Figures, and a beautiful assortment of Foreign Ornamental Glass Articles.

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SCOTTISH FIELD SPORTS. A Volu
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SHOOTING SIMPLIFIED FOR YO
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"DEAR SIRS,—I have, as requested, to-day visited the to the Advertisement of the Nottingham firm, who state t for many years in the Royal Laundry, and have been Superintendent, that none but yourselves have any right t to Her Majesty's Laundry, as no other Starch is there u years, but the Glenfield Patent Starch.

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"I am, Dear Sir
"Your

THE PUREST CONFECTIONS WHIC

ARE

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In every variety of Seasoning, such as P
Cinnamon, Lemon, &c.

These **Lozenges** are Free from Colour, of an Imp factured by Patent Steam Machinery, all working of the and the most perfect Cleanliness insured.

The Manufacturer's Name being on EVERY Packet, in Genuine Goods ONLY.

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ALEXANDER McKENZIE & CO.

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The eminent position they have so long held for turning out only first-class Furniture, ade from thoroughly seasoned materials and by the highest skilled labour, combined ith their very moderate charges, is a guarantee that all Orders committed to their care ill be executed with efficiency and economy.

A. Mc K. & Co.'s experience and connexions being so varied, they can with equal ility give Designs and Estimates, and arrange for the most elaborate and enriched yle for the most ornate Mansion, or the simple and chaste, and to suit the plainest lla or Cottage. Always on hand a large Stock of **Dining-Room**, Drawing-oom, **Bedroom, Library and Hall Furniture in Spanish Ma**-ogany, Rosewood, **Italian** Walnut, **Maple**, Birch, Oak, &c.

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Silk Damasks, Worsted Damasks, Reps, Arras, Tournays, rench and English Chintzes, Blankets, Bed Quilts, Sheetings, owellings, Table Covers, Lace and Muslin Curtains. And very requisite of Upholstery House Furnishings.

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CARVERS AND GILDERS.

urniture Packed and Removed to all parts of the Country, and for Shipment Abroad.

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To carry Hot Water to any part of the House;

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Dry Hair Felt for covering Boilers, Steam Pipes, &c., **effects a saving in Fuel of 20 to 25 per cent.** In sheets 20 by 34 inches, various thicknesses.

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Paintings, Drawings, First-class Engravings, Chromo-Lithographs, Photographs and Photographic Albums, and Portrait Visiting Cards, Artists' Materials, and Tourist Sketch Books, &c., of every description.

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MANUFACTURERS OF ÆRATED WATERS.

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Orders from the Country will have prompt dispatch be carefully packed.

'ATERSON, SONS, & CO.,
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Publishers of DUN & THOMSON'S Famous Edition of

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MES DUNCAN & CO.,

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HER MAJESTY, PRINCE OF WALES, AND THE
ROYAL HOUSEHOLD,

Pall Mall, London,

AND

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The Queen's Hot

GLASGOW.

To the Nobility and Gentry.

MAC GREGOR,

In returning thanks for the tinguished patronage he has rec since opening the Queen's H announces, that having a twenty y lease, he has this Season redecor refurnished, and added additional D room accommodation, has given up interest in other Hotels, to devote entire attention to the Queen's— largest Hotel in Scotland.

He trusts that nothing on his will be wanting to conduct the Hot a manner worthy of future patron and support.

April, 1861.

Royal Hotel, Aberdeen.

PATRONISED BY HER MAJESTY.

D. ROBERTSON,

POSTING MASTER TO HER MAJESTY,

H.R.H. Prince Albert, and H.R.H. the Duchess of Kent.

The only Hotel in Aberdeen ever honoured with a visit from any of the Royal Patrons.

DAVID ROBERTSON takes the present opportunity of thanking those who have patronised him during the last nineteen years, and begs to acquaint them and the Public that he has taken a further lease of the Royal Hotel.

The House has undergone a thorough repair, including papering, painting, and re-furnishing.

Being one of the largest in Scotland, it has every variety of accommodation—making up nearly a hundred beds—numerous Private Sitting Rooms—the largest and most elegant Coffee-Room in Scotland—and the only Hotel in Aberdeen where a Public Room is specially kept for parties with Ladies who wish to avoid the expense of a Private Sitting Room.

The Commercial Room, both in the present Proprietor's time and that of his predecessors, has been so numerously and respectably patronised by the Principals and Representatives of Commercial Houses, from all parts of the kingdom, as to make it superfluous to allude to it in an advertisement.

No Hotel in Aberdeen has such an extent of Stock-Room accommodation as this.

D. R. would call public attention to the fact that, while everything furnished for the Table is of the very best description, his scale of charges is as moderate as those of minor establishments.

Gentlemen supplied with first-rate SHOOTING, at so much per Gun—Bed and Board included; and every information can be obtained about Fishings and Shootings.

The resources of the Stable Yard attached to the Royal Hotel are of an extent not surpassed in Scotland, insuring parties Posting of experiencing no delay in the getting any number of Horses. No Posting attached to any other Hotel in Aberdeen.

Parties having cause for complaint, will much oblige D. R. by their making it known to himself.

There are always conveyances at the Steamers and Railway Stations from the *Royal Hotel* to take Passengers either to the Hotel or *direct to any Station.*

The Royal Hotel is within two minutes' walk of the South and Deeside Stations, and three minutes' of the Great North.

The elegant suite of Refreshment Rooms fitted up by the "Great North of Scotland Railway Company" at KEITH (halfway between Aberdeen and Inverness), are leased by Mr. ROBERTSON; and parties travelling North or South, who have not time to visit an Hotel in Aberdeen, will find abundant supply of every kind of Refreshment, for which *sufficient time is allowed by all the Trains.*

Orders for **Special Dinners** or **Luncheons** particularly attended to.

ROYAL HOTEL, Aberdeen, 1861.

(FROM A DAGUERREOTY

BEDFORD

BRIGH

ESTABLISHED 1814.

Messrs. THURSTON & Co.,

Billiard Table Manufacturers,

(BY APPOINTMENT TO HER MAJESTY.)

14, CATHERINE STREET, STRAND, LONDON,

AND AT SALISBURY WHARF, ADELPHI.

Patentees also of a variety of Improvements in Billiard Tables.

Until within the last few years, Messrs. THURSTON AND CO. have not thought it necessary to advertise their old-established firm, their name being known far and wide as the best makers; but as the present is a rare opportunity of addressing gentlemen who patronise this most élite and scientific game, they avail themselves of it, having just now added some singularly useful IMPROVEMENTS to the ORDINARY TABLE, and particularly applicable to Tables for the use of gentlemen in private or country mansions.

Messrs. THURSTON AND CO. have had the honour, for nearly half a century, to supply Her Majesty's Regiments in all parts of the world, as well as the Native Regiments in India.

As to maintaining a superiority and mathematical accuracy of workmanship, Messrs. T. & Co. have pleasure in selecting from numerous testimonials the following letter:—

"2, Queen's Square, Westminster, S.W.
"8th May, 1861.

"GENTLEMEN,—Having tested your Patent mode for warming the native India-Rubber Cushions of Billiard Tables when they have become hardened by cold, I find the change is effected in a few minutes—the plan is simple, effectual, and not at all likely to get out of order. I have been acquainted with, and have played upon, your Tables for the last Thirty Years, and have no hesitation in stating that they are better than any others that I know of.

"I am, Gentlemen, your obedient servant,
"THOMAS B. DAFT,
"Associate of the Institution of Civil Engineers."

Cushions of Old Tables Re-Stuffed on the Patent Principle.

CLOTHS OF THE FINEST TEXTURE.—BALLS OF SUPERIOR AND WELL-SEASONED IVORY TURNED ON THE TRUEST MECHANICAL PRINCIPLES.

The Slate Tops are direct from the Bangor Quarry, and manufactured on our own Premises.

INVENTORS AND MANUFACTURERS OF THE CENTRAL REVOLVING LAMP,
Being the BEST LIGHT ever constructed for BILLIARD TABLES.

5s. 6d. | 12s. 6d. | 4s. 6d.

CHINA AND GLASS ROOMS,

49 & 50, Oxford Street, London, W.

2s. Pair. | Parian Violet Vase, 1s. 6d. | White and Gold China, 4s. 6d. Half-a-dozen.

JOHN W. SHARPUS

Begs to call the attention of the Public to his IMMENSE STOCK, which is now replete with all the most Modern and Classic Designs in China, Glass, Earthenware, Parian Statuary, and Bohemian Glass.

PARIAN STATUARY AND BOHEMIAN GLASS.

DINNER SERVICES.

	£	s.	d.
Dinner Services, to Dine 12 persons....from	2	2	0
Ditto, richly gilt.....from	3	13	6
Handsomely painted and gilt.....from	5	15	6
Rich coloured bands, handsomely gilt, from	7	7	0
Porcelain Services, rich coloured bands, handsomely gilt.....from 25 guineas			

A variety of patterns, expressly for India and the Colonies, at the same moderate prices.

DESSERT SERVICES.

For 12 persons, in neat coloured borders, from 1 1 0

Dinner ditto, antique borders and coloured wreaths.....from 1 8 0

	£	s.	d.
A variety, coloured borders, with gold and flowers, on the finest Porcelain .....from	0	15	0
Ditto, from 6 to 10 guineas and upwards.			
China Breakfast Set, gold edge, viz., 6 breakfast cups and saucers, 2 plates, 1 slop, 1 sugar basin, 1 milk jug ...from	0	12	6
A large assortment of Patterns at the same moderate prices.			

TEA SERVICES.

White China, gold edge .....from	0	17	6
Neat painted band and flowers .....from	1	8	6
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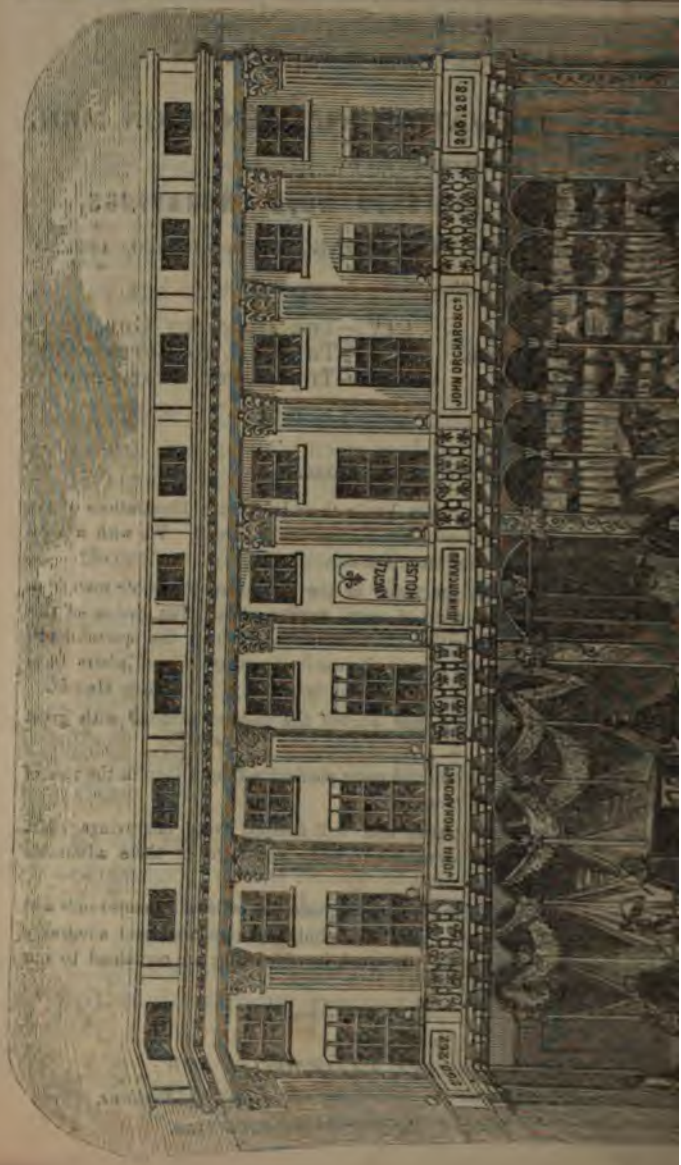
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15	1000	284 15 0	183 19 0	1,183 19 0
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25	1000	319 7 6	201 12 0	1,201 12 0
30	1000	365 12 6	207 0 0	1,207 0 0
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40	1000	486 17 6	236 0 0	1,236 0 0
45	1000	565 12 6	249 0 0	1,249 0 0

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25	1000	21 5 10	5 16 [illegible]
30	1000	24 7 6	6 13 [illegible]
35	1000	27 19 2	7 14 [illegible]
40	1000	32 9 2	8 19 [illegible]
45	1000	37 14 2	10 8 [illegible]
50	1000	45 5 6	12 12 [illegible]
55	1000	56 15 10	16 6 [illegible]
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